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Volume 19 January 1950 Number 1

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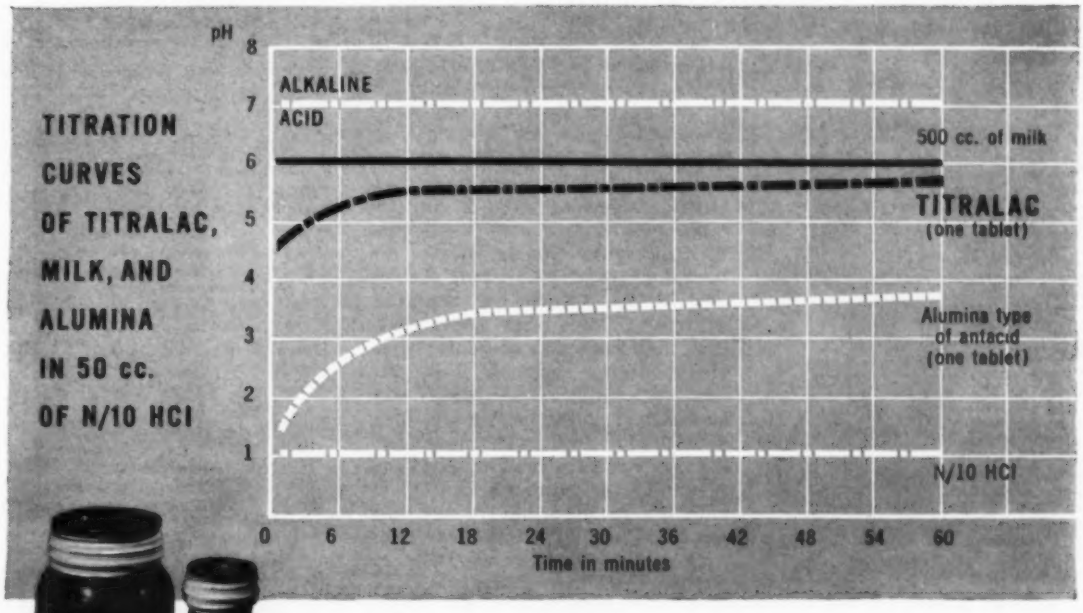

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## NEWS

COLONEL WESLEY C. COX, office of the Surgeon General, Washington, D.C., attended the First Inter-American Congress on Industrial Medicine and Hygiene, December 1-14, 1949, at Buenos Aires, Argentina. He was the official delegate of the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS. Writing from Buenos Aires, on December 15, to DR. SLOBE, Secretary of the Association, COLONEL COX says: "It is with great pleasure that I am able to report that at the closing ceremony last evening your official delegate was honored by being presented with a diploma and gold medal by the PRESIDENT GENERAL JUAN D. PERON. This diploma and gold medal were the prize for the best paper on industrial medicine read before the Naval and Military Section of the Congress. The First Congress was a great success, and interest in industrial medicine has been tremendously stimulated by the participation of delegates from 21 of the Central and South American republics."

DR. LEWIS J. CRALLEY, who has been Chief of the Cooperative Health Services Branch of the Industrial Hygiene Division of the Public Health Services, has been appointed to succeed DR. H. H. SCHRENK as Chief of the Environmental Investigations Branch of the Division. DR. SCHRENK'S resignation, to become Research Director of the Industrial Hygiene Foundation at Pittsburgh, was noted last month.

MEMBERS of the NEW JERSEY ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS attended and participated in a program devoted to the severely disabled, held at the Kessler Institute for Rehabilitation, Pleasant Valley Way, West Orange, New Jersey, Friday evening, November 11. The program began with a tour of the institute, conducted by DR. HENRY H. KESSLER, Medical Director. A lecture by DR. KESSLER on objective problems and technics in the medical rehabilitation of the severely physically disabled followed. MISS SIGNE BRUNNSTROM, Director of Professional Education for the Kessler Institute, then spoke on the coordination of rehabilitation facilities in

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rehabilitation centers. Films dealing with the rehabilitation of the physically disabled were shown following MISS BRUNNSTROM'S address. A discussion concluded the formal program.

## Du Pont Medical

WHEELING, West Virginia, *News-Register*, November 10, 1949: "Thirty members of the Augusta County Medical Association and 11 visiting physicians from Wilmington and Charlottesville were guests of the local Du Pont Company last night where they were shown the new medical section, given a short plant tour and were guests at dinner in the cafeteria. The new medical section facilities were completed on October 1 and visiting doctors were escorted through the 19-room section by DR. C. L. SAVAGE, medical supervisor, and members of his staff. The section includes the most modern equipment and has been hailed as 'the last word in industrial medicine.' The latest x-ray equipment is installed, a physiotherapy room is available, and a complete laboratory and dispensary are maintained. Other rooms include: examination rooms, emergency rooms for special examinations, and a waiting room. Three doctors make up the staff at present, and 11 nurses, technicians and stenographers are on duty. DR. SAVAGE is assisted by DR. T. L. HOYT, and DR. E. E. CHRISMAN."

DR. LLOYD NOLAND, Chief Surgeon and Superintendent of the Department of Health, Tennessee Coal, Iron & Rail Road Co., Birmingham, Alabama, died November 27, 1949. DR. NOLAND was born in Virginia, July 25, 1880. He graduated M.D. at the University of Maryland School of Medicine in 1903; interned at Maryland General Hospital, Baltimore; and in 1904 joined the Isthmian Canal Medical Corps, where he remained until 1913, when he became identified with Tennessee Coal, Iron & Rail Road Co. He was a Fellow of the A.M.A., and the A.A.I.P.&S., a member of numerous other medical organizations, and one of the Founders' group of the American Board of Surgery. He had been a member of the Alabama State Board of Health, and was Surgical Chief of the Employees' Hospital at Fairfield, Alabama.

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**References:** 1. Cost of the Common Cold: Met. Life Ins. Co. Stat. Bull. 28:6, Nov. 1947. 2. The Prophylaxis and Treatment of the Common Cold with Neohetramine (thonzylamine hydrochloride). Ind. Med. 18:508 (Dec.) 1949.

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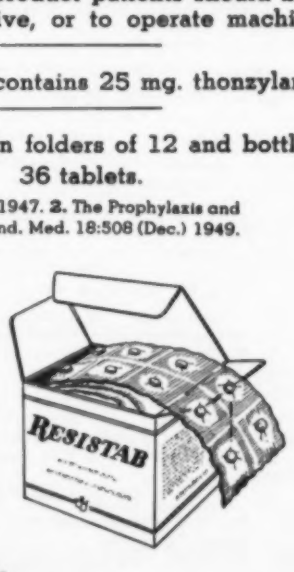


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April 23-29, 1950, Chicago.

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DR. JERMYN F. MCCAHAN, Medical Director at Bausch & Lomb Optical Company since 1941, left Rochester early in January to accept a post with the American Medical Association in Chicago. He has been appointed assistant to DR. CARL M. PETERSON, Secretary of the A.M.A.'s Council of Industrial Health. In his new assignment, DR. MCCAHAN will travel extensively, visiting numerous industries throughout the U. S. DR. MCCAHAN is a graduate of Syracuse University's School of Medicine, Class of 1939. Until a permanent successor is appointed, DR. JAMES J. CLEMENTS, a 1940 graduate of Syracuse University's School of Medicine, will serve as Bausch & Lomb's Medical Director. Assisting him are DR. HARRY F. BARGE, and DR. EDWARD F. WOOD, both also from Syracuse School of Medicine.

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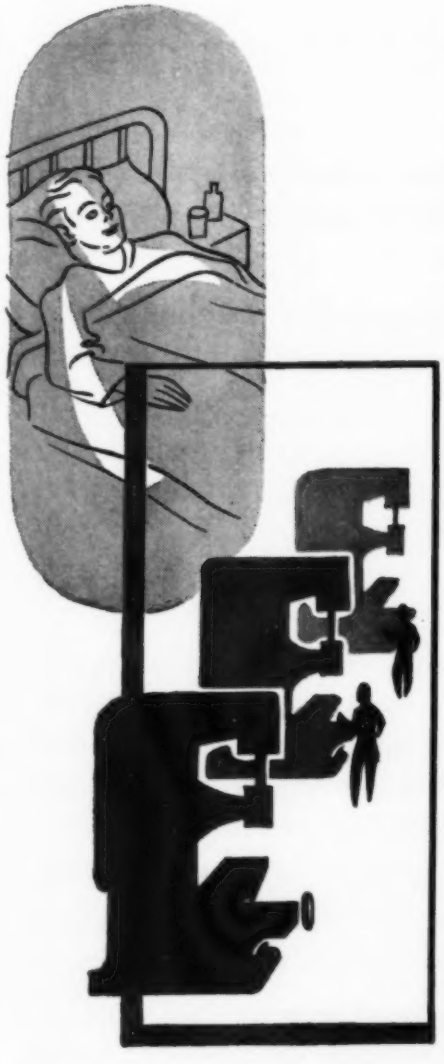

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# Antihistaminic Therapy of the Common Cold

## Nature of the Common Cold

Since the work of Kruse in Germany, and of Shibley and associates in this country, it has been generally accepted that the common cold is caused by a virus, as yet unidentified. Although no specific therapy has yet been discovered for the infective agent, investigators have noted a marked similarity between allergic symptoms and many of the symptoms of the cold. The report of Troescher-Elam and others that the nasal secretions of patients with colds contained twice as much histamine as was found in allergic rhinitis emphasized the allergic component of the common cold.

In an editorial in the J.A.M.A., September 10, 1949 on allergy in epidemiology of the common cold the view is expressed that cold-susceptible patients often present borderline or subclinical types of allergy. According to Fox and Livingston the common cold is actually an allergic response to the cold virus or its products.

The present-day concept of the phenomenon whereby latent pathogens located in the upper respiratory tract suddenly become the virulent secondary invaders of the common cold may be outlined as follows:

1 The cold virus comes in contact with the tissues of the upper respiratory tract.

2 An allergic reaction follows characterized by edema of the mucous membranes.

3 There may be an associated trigger mechanism such as chilling, ingestion of food to which one is sensitive, etc., which further stimulates the allergic reaction.

4 The edematous mucous membranes lose their normal protective powers and provide a better culture medium for the cold virus and other pathogens.

5 Further invasion of the body by pathogens may follow, causing the complications of the common cold.

Thus, it is readily seen that counteracting the allergic reaction can break the chain in this course of events.

## The Role of Antihistaminics

In the September, 1947 issue of the United States Naval Medical Bulletin, Brewster reported that antihistaminic therapy in the common cold gave unusually satisfactory results. In a later series of 572 patients treated with any one of five different antihistaminics

results were obtained which confirmed this earlier impression. Similar findings were reported by Gordon on 500 cases of upper respiratory infection, and by Murray on 494 patients treated with antihistaminics.

These studies point out several important facts:

**a** that 70-90% of colds are aborted or alleviated with antihistaminic therapy;

**b** that the effectiveness of treatment depends on prompt institution of therapy;

**c** that antihistaminics are effective as a group;

**d** that the reduction of sneezing and coughing usually effected, regardless of the duration of the cold itself, reduces the spread of the common cold by eliminating droplet exposure.

## Therapy

*Inhiston* is the potent antihistaminic 1-phenyl-1-(2-pyridyl)-3-dimethylaminopropane characterized by effectiveness of antihistaminic action and low incidence of undesirable side-effects. It has been proven in numerous clinical studies in a variety of clinical conditions. Medical literature has appeared based on comparative clinical studies stating that this particular compound is superior to some of the earlier preparations in effectiveness and absence of side-effects. Laboratory studies show that the therapeutic index — the ratio of potency to toxicity—of *Inhiston* is 135.* This compares most favorably with the ratios of potency to toxicity of widely used older antihistaminics which range from 48 to 70. Therefore, the maximum recommended daily dosage of *Inhiston* is only 60 mg. whereas the recommended dosage of most other antihistaminics must be 100 mg. or more, per day. *Inhiston's* lower effective dosage level is of real advantage since it further reduces the possibility of side-effects.

*Inhiston*, therefore, is a truly effective antihistaminic for control of the common cold. When taken at the first sign of a cold it can abort the cold. Taken later, *Inhiston* helps shorten the duration of the cold, reducing cross-infection by stopping excessive nasal secretion. Its availability without prescription indicates clinical safety and enables each individual to have it within reach at the very first sign of the common cold, the optimum time to commence antihistaminic therapy.

The *Inhiston* package is plainly and carefully labeled to emphasize when the drug should be taken and when discontinued, and how much should be taken. A separate dosage schedule is given for children, and specific warning is made in regard to possible drowsiness. Professional samples of *Inhiston* are available upon request.

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the anti-histamine tablet
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TO BE TAKEN AT FIRST SIGN OF A cold

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# CORICIDIN*

(antihistaminic—antipyretic—analgesic)

## *with* Chlor-*Trimeton**

## *antihistaminic therapy*

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... shortens duration and decreases severity of an established cold.[1, 2]

... reduces the spread of infection to others by eliminating sneezing, lacrimation, rhinorrhea and coughing.[1]

**DOSAGE AND TIMING:** Two CORICIDIN tablets at the very first indication of a cold, then one tablet every three or four hours for three or four days. In established colds, one tablet every three or four hours for palliative effect.

**COMPOSITION:** Chlor-*Trimeton* 2.0 mg. (1/30 gr.) with Acetylsalicylic acid 0.23 Gm. (3½ gr.), Acetophenetidin 0.15 Gm. (2½ gr.) and Caffeine 0.03 Gm. (½ gr.).

**PACKAGING:** CORICIDIN tablets, tubes of 12; bottles of 100 and 1000.


**BIBLIOGRAPHY:**

1. Brewster, J. M.: U. S. Nav. M. Bull. *49*:1, 1949.
2. Murray, H. G.: Indust. Med. *18*:215, 1949.


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*Joslin, E. P., Postgrad. Med.: 4:302 (Oct.) 1948.
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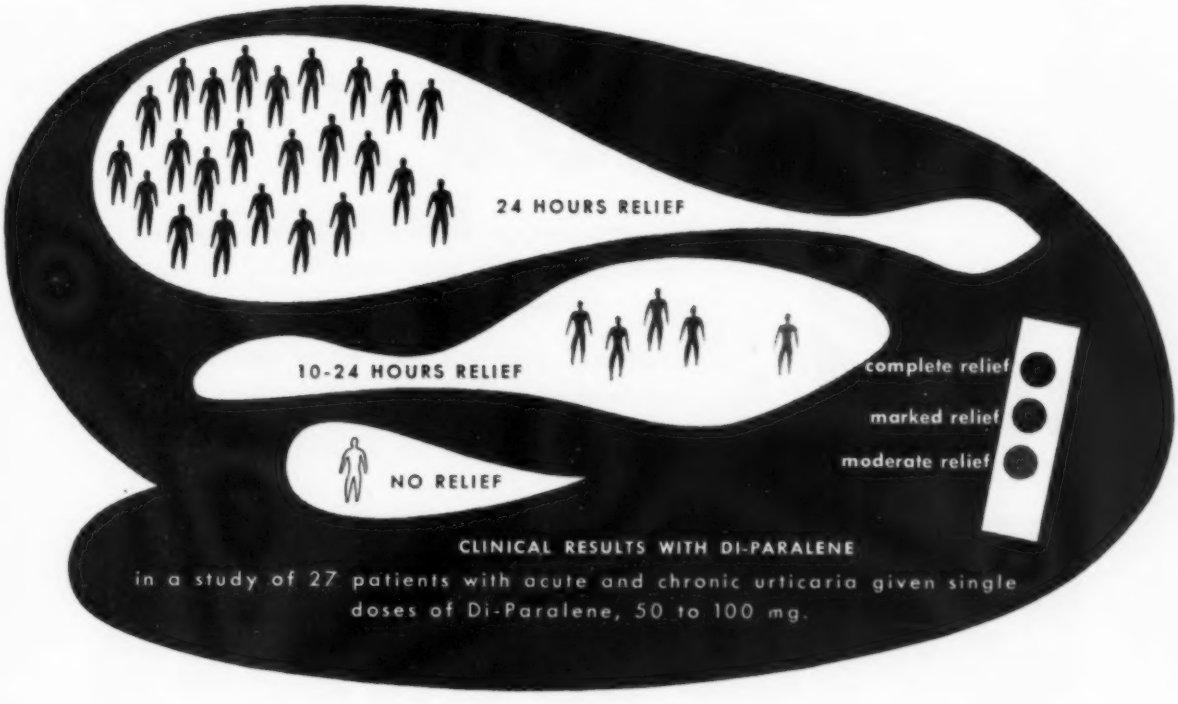


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Children: according to weight.
Available: Bottles of 20 tablets and 100 tablets.

**bibliography:** (1) Brewster, J. M.: U. S. Nav. M. Bull. 49:1, 1949. (2) Gordon, John S.: The Laryngoscope 58:1263-73, 1948. (3) Murray, H. G.: Indust. Med. 18:215, 1949.

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*Reprint of the research study and findings will be sent on request.

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INDUSTRIAL MEDICINE AND SURGERY

*Volume 19* JANUARY 1950 *Number 1*

# Physical Deviations in 501 Consecutive Male Examinations

JAMES K. MARTINS, B.S., M.D.,
John Deere Waterloo Tractor Works,
Waterloo, Iowa

THE physical examination can get to be a chore when it is sandwiched between the many other duties of the plant physician. This was my own situation, when I found that my physicals were getting a little cursory and my mind was not channelling itself into the job at hand. So, I set about doing a statistical analysis of physical findings; making a mental stimulant out of the work involved. This aspect of the physical anthropology of man is much discussed statistically, but very few statistics are available. The statement was made to me in medical school that 15% of humans had pilonidal dimples or sinuses. My interest in the matter is that I've been sitting on one for a long time. I found out the statistics were wrong; I proved to my own satisfaction that the existence is in the realm of 3%.

The field of how many, as well as how much and what to do about it, is a fascinating one. Anthropological knowledge of man together with our statistical knowledge of him can be advanced. Physicals can be of interest, for the search for disease is, by far, more of a challenge than the treatment of a presented ailment.

The human body has many variations despite the general similarity among all humans. The variations in disease and construction make for interesting speculation by our more philosophical brethren. This paper attempts to present some of these variations by a careful tabulation of 500 cases which should be statistically representative. The examinations were made consecutively and personally by the writer and were unselected. As new employees were examined, they were added to the statistics. The project started on 2-11-48 and was completed on 6-21-49. One extra case crept into the analysis, for good measure. The tabulation is on the basis of five-year intervals up to the age of 51, after which they were compiled into one group (Table 1).

As can be seen, the very young and the upper middle aged group showed the most hires. Sociologically, this can probably be explained on the fact that by this time the middle aged groups have stabilized and are applying acquired skills. The older group has been discarded or has been unsuccessful in keeping up the skilled pace. The younger group is attempting to attain a suitable life work.

The group examined were a factory type, in medium-heavy to light industry, hiring a little over 3000 employees. The examinees ranged from high school students on their first job to displaced persons from Europe who could not speak English and made eye charts difficult to apply. Many times interpreters were needed. About 5% of the group were colored and Mexicans.

The tabulation included some 80 separate physical characteristics and a huge miscellany. Rectals were done on all males above the age of 40. Height and weight were recorded for each individual (Table 2).

TABLE I.

| Age Group | Number of Cases |
|---|---|
| 16-20 | 101 |
| 21-25 | 120 |
| 26-30 | 96 |
| 31-35 | 48 |
| 36-40 | 34 |
| 41-45 | 21 |
| 46-50 | 29 |
| 51+ | 52 |
| Total | 501 |

TABLE 2.

| Age Group | Average Height | % Over 6 Feet | Average Weight |
|---|---|---|---|
| 16-20 | 5'9" | 16% | 154 |
| 21-25 | 5'9.6" | 13 | 158.7 |
| 26-30 | 5'8.4" | 13 | 171.3 |
| 31-35 | 5'9.5" | 23 | 170 |
| 36-40 | 5'8.4" | 3 | 162.9 |
| 41-45 | 5'7" | 0 | 168 |
| 46-50 | 5'8" | 10 | 167 |
| 51+ | 5'6.9" | 3.8 | 163 |

TABLE 3.

| Age | FAR VISION | | | | | | | NEAR VISION | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No Glasses | | % Wearing | Uncorrected | | Corrected | | No Glasses | | Uncorrected | | Corrected | |
| Group | R/20 | L/20 | Glasses | R/20 | L/20 | R/20 | L/20 | R% | L% | R% | L% | R% | L% |
| 16-20 | 20 | 21 | 10.8 | 5.3 | 7.3 | 18.2 | 19.0 | 94.8 | 96.8 | 84.7 | 82.9 | 97.1 | 96.1 |
| 21-25 | 18.8 | 19.1 | 10.8 | 7.7 | 6.0 | 18.6 | 17.5 | 94.9 | 96.7 | 78.7 | 76.7 | 96.1 | 82.1 |
| 26-30 | 19 | 19.8 | 11.4 | 8.7 | 9.4 | 18.0 | 18.2 | 95.2 | 95.2 | 74.5 | 75.1 | 90.6 | 92.4 |
| 31-35 | 18.7 | 19.5 | 27.0 | 9.6 | 9.7 | 18.1 | 17.6 | 94.2 | 97.9 | 76.4 | 76.6 | 95.1 | 94.0 |
| 36-40 | 22.1 | 20.8 | 26.5 | 11.5 | 11.5 | 16.0 | 16.0 | 91.7 | 89.5 | 70.8 | 68.6 | 88.9 | 88.8 |
| 41-45 | 16.7 | 18.8 | 9.5 | 18.0 | 19.0 | 20.0 | 20.0 | 79.3 | 85.5 | 78.7 | 80.0 | 95.7 | 89.5 |
| 46-50 | 16.5 | 15.8 | 45.0 | 8.0 | 8.0 | 15.0 | 18.0 | 58.7 | 59.0 | 39.3 | 38.5 | 82.5 | 82.5 |
| 51+ | 13.7 | 13.1 | 62.1 | 8.9 | 9.5 | 16.0 | 17.4 | 53.4 | 53.4 | 34.4 | 36.4 | 83.5 | 81.2 |

From this series it is found that the average factory worker is about 5 feet, 8.4 inches tall and weighs about 164.3 pounds. A little over 10% are six feet and over in height. Sociological speculations can be drawn from the low incidence of tall men in the middle aged group.

Sight was tested by the Snellen chart for far vision, and the near vision was tested in a box-type standard distance, standard type machine. The lighting was generally uniform.

As can be readily seen from Table 3, there is a sudden drop in visual acuity, particularly in near vision, after the age of 45. This is the group that needs the greatest care in job placement and the most consistent re-checks. They are also the hardest group adequately to refract.

Hearing was tested by rubbing the fingers together, 100% being 20/20. The approximate distance at which they were no longer able to be heard is the numerator of the fraction. Routine laboratory tests are also presented in Table 4.

TABLE 4.

| Age Group | Hearing R/20 | Hearing L/20 | % below 15/20 Either Ear | Positive Kahn | Positive Albumen | Positive Glucose | Number not in Class I |
|---|---|---|---|---|---|---|---|
| 16-20 | 19 | 19 | 7.8 | 0 | 8 | 2 | 11 |
| 21-25 | 18.8 | 18.8 | 8.4 | 2 | 4 | 1 | 8 |
| 26-30 | 18.5 | 19.3 | 10.4 | 3 | 1 | 4 | 7 |
| 31-35 | 17.5 | 17.0 | 20.7 | 2 | 1 | 0 | 6 |
| 36-40 | 17.0 | 13.7 | 26.5 | 1 | 4 | 2 | 4 |
| 41-45 | 13.0 | 14.3 | 47.6 | 0 | 0 | 0 | 7 |
| 46-50 | 13.0 | 13.0 | 51.7 | 0 | 2 | 1 | 11 |
| 51+ | 8.6 | 8.3 | 69.2 | 1 | 3 | 1 | 34 |
| Total | | | | 9 | 23 | 11 | 88 |
| % | | | | 1.8% | 4.6% | 2.2% | 17.5% |

Table 5 records the percentage incidence of physical deviations. Only those occurring above 1% are listed.

TABLE 5.

| Condition Observed | % Incidence | Condition Observed | % Incidence |
|---|---|---|---|
| Acne—mild | 8 | Hernia | 2.8 |
| Moles | 1 | Right inguinal | .8 |
| Tattoos | 3 | Left inguinal | .8 |
| Pupillary reaction | | Bilat | .8 |
| absent or unequal | 1.39 | Umbilical | .4 |
| Deviated septum | | Varicocele (all left) | 1.58 |
| Right | 3.9 | Hydrocele (all left) | 1.0 |
| Left | 2.0 | Dilated rings | 10.2 |
| Teeth | | Right | .6 |
| Missing | 13.0 | Left | .4 |
| Poor repair | 4.7 | Bilateral | 9.2 |
| Plates | | Phimosis | 2.0 |
| Partial | 1.0 | Scoliosis | 2.6 |
| Upper | 6.9 | Interesting: only one missing digit in the series. | |
| Lower | 4.5 | | |
| Tonsils | | Bowed legs | 2.0 |
| Hypertrophied | 9.3 | Flat feet | 57.6 |
| Absent | 28.7 | 1+ | 30.5 |
| Atrophic | 6.0 | 2+ | 15.5 |
| Normal | 55.0 | 3+ | 6.6 |
| Removed, tags present | 8.0 | 4+ | 5.0 |
| Incidence of incomplete surgery | 28.0 | Prostatic hypertrophy | 2.0 |
| Supernumerary nipples | 3.0 | Pilonidal dimple | |
| Incidence 12 out of 16 on the left side. Why? | | or sinus | 3.0 |

Disease conditions observed by physical examination and their incidence are summarized in Table 6.

TABLE 6.

| Condition Observed | % Incidence | Condition Observed | % Incidence |
|---|---|---|---|
| Pterygium | 1.39 | Circumcision | 29.9 |
| Cataract | 1.0 | Appendectomy | 11.5 |
| Pyorrhea | 1.0 | Varicosities | |
| Murmurs | 4.1 | Right | 1.1 |
| Systolic (apex) | 3.0 | Left | .8 |
| Systolic (base) | 1.1 | Bilateral | 3.0 |
| Extrasystoles | 1.1 | Bunions | 1.39 |
| Sinus arrhythmia | 3.0 | Hernia repairs | 4.0 |
| Hemorrhoids | 5.0 | Bilateral | .8 |
| Hemorrhoidectomy | .2 | Right | 1.6 |
| Babinski (unilateral) | 1.0 | Left | 1.6 |

Blood pressure was checked on the entire group, the criteria being the onset of sounds and the sudden change in tone representing the diastolic pressure (Table 7).

TABLE 7.

| Age Group | Blood Pressure | Number over 150/95 | % Over |
|---|---|---|---|
| 16-20 | 124/79.6 | 4 | 4.0 |
| 21-25 | 124.9/81.6 | 3 | 2.5 |
| 26-30 | 125/82.7 | 3 | 3.0 |
| 31-35 | 126/82.6 | 2 | 4.0 |
| 36-40 | 131/88 | 5 | 14.7 |
| 41-45 | 127/84 | 2 | 9.5 |
| 46-50 | 138/91 | 5 | 17.2 |
| 51+ | 147/91.5 | 20 | 38.0 |
| Ave. | 130.3/85.1 | | 8.8 |
| Total | | 44 | |

The incidence of hypertension was 8.8% in a group of 501 individuals of all ages. The preponderance of hypertension was in the older group, half being above the age of 45. The significance of aging factors in a population group is again brought out conclusively.

OUR brethren of the medical profession, not allied with our field, often feel that our work in diagnosis and pathology does not have enough variety to test our abilities. In our view, of course, this constitutes either blasphemy or lack of information. I am presenting from this group of routine physicals a series of noteworthy cases which might demonstrate the scope of industrial medical practice—just routinely.

CASE 1: Male age 18. Temp. 99.6; B.P. 160/90; soft systolic murmur over the entire precordium; splinter hemorrhage—right index finger. Diagnosis: endocarditis.

CASE 2: Greek displaced person. Positive Rumple-Leede on B.P. determination. Reversed after period of adequate diet in the United States.

CASE 3: 20 years old; 5 ft. ½ in. tall; weight 104 lbs. High voice and infantile genitalia; no pubic hair. Appears to be about 10-12 years of age. Diagnosis: infantilism (pituitary), and a good worker.

CASE 4: Rudimentary left arm and thumb. Diagnosis: congenital deformity.

CASE 5: Spastic left hemiplegia; spastic claw hand; diminished muscular development left side. Diagnosis: birth injury.

CASE 6: Marihuana addiction.

CASE 7: Multiple osteomata in all bones. X-ray proves them non-malignant.

CASE 8: War veteran injured on stepping on a mine in Europe. Arm amputated; multiple tube grafts on arms and legs.

CASE 9: Automobile accident. Has an aphasia which is discernible only on non-recognition of certain printed words.

CASE 10: Patient is a high class mental defective, about the moron level. Was properly placed, and was successful in his work situation.

CASE 11: Self-inflicted pornographic tattoos; low I.Q. Under proper supervision made a successful worker.

CASE 12: Right syndactilism leaving only two fingers and thumb. Second and third metacarpals and phalanges fused into a single finger. Third and fourth metacarpals and phalanges fused into a single finger.

CASE 13: Numerous asymptomatic para-rectal and pilonidal sinuses. D.D. tuberculous fistulas or Meleny ulcer. Tuberculosis ruled out and man moved elsewhere before work-up could be completed.

CASE 14: Gives a history of sustaining the following surgery: (1) appendectomy; (2) cholecystectomy; (3) bilateral herniorrhaphy; (4) gastro-enterostomy; states, "I still have my pain." Complications: ventral hernia through the gastro-enterostomy scar; recurrence of left inguinal hernia—repaired with fascia lata implant; low mental capacity, the latter being part of his necessity for much of the surgical procedure. Incidental scrotal attachment to the entire ventral surface of the uncircumcised penis.

CASE 15: Has periods of amnesia due to cerebral edema following the intake of coffee, cottonseed or coal tar products. Nystagmus present, pointing toward brain damage in an attack. Not usable in an industry where the latter two products are common.

CASE 16: States that excitement causes him to perspire freely on his hand. He was checked and it was found that he perspired only over the distribution of the ulnar nerve. No further checks were possible because of limitation of employment.

SUMMARY: The sharpening up of diagnostic acumen by the careful study of physical anthropology can relieve the boredom of routine. The psychotherapy adds immeasurably to the personal output and effectiveness. It also adds to the limitless knowledge about man and his internal and external environment which we are all seeking.

## Section Meeting on Workmen's Compensation

DR. CARL T. OLSON, Chairman of the A.A.I.P.&S. Committee on Workmen's Compensation and Insurance, has arranged a Section Meeting on Workmen's Compensation which will be a feature of the Tuesday afternoon program at the Thirty-Fifth Annual Meeting of the Association at the Hotel Sherman, Chicago, April 23-29, 1950. The preliminary program for the full week of the Conference appears on pages 46 and 47 herein. The general title of DR. OLSON'S Section Meeting is "Medical Problems of Workmen's Compensation Policy and Administration." And the speakers are MARY DONLON, Chairman of New York State Workmen's Compensation Board; HARRY NELSON, Director of Wisconsin's Workmen's Compensation Commission; ASHLEY ST. CLAIR, Home Office Counsel, Liberty Mutual Insurance Company, Boston; and DR. BEN FREES, of Los Angeles. There will be a discussion period at the close of the formal presentations. The meeting is to begin at 1:30 P.M. on Tuesday, April 25, and will adjourn at 5:00. This Session has the promise of great interest to all physicians interested in forensic medicine.

# Legal Aspects of Industrial Medicine

DR. LEON LATTES,
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University of Pavia, Italy

INDUSTRIAL medicine, in our day, has become an autonomous field. Autonomy, of course, does not necessarily mean independence for, in its triple aspect—clinical, hygienic, and medicolegal—industrial medicine is closely linked with clinical, preventive, and forensic medicine. It is also influenced directly by developments in legislation and jurisprudence concerning the clinical treatment of diseased workers.

I am sure that there is little I can teach you, coming as I do from another country; but I should like to remind you that the first organized course in industrial medicine was given in Italy in 1894 by Luigi DeVoto, founder of the "Clinica del Lavoro" at the University of Milan. This department was, for many years, the isolated cornerstone of the impressive movement which developed later. In accordance with the training of its founder, the department had, at first, a clinical orientation. It evolved later towards preventive hygiene, thus restoring the tradition of Bernardino Ramazzini, who, in the Seventeenth Century, wrote the immortal book, "De Morbis Artificum." This book started the modern specialty of industrial medicine by pointing out the relationship between certain types of labor and certain kinds of pathology.

I do not wish to comment on the clinical and preventive aspects of industrial medicine, as that would be out of my field. I would, however, like to emphasize the medicolegal aspect of the subject, on the basis of some of my personal experiences in Europe and South America.

THE industrial physician is concerned not only with hygienic and medico-clinical problems involving the preservation and functional restoration of the worker, but also with the medicolegal problem of safeguarding the economic interests of the injured worker.

The duty of the industrial physician starts with physical examination of the worker at the time of hiring. This is not only for the purpose of placing the right man in the right place but, also, for the purpose of studying the motivation of a candidate which might induce him to simulate or dissimulate a physical condition. This problem also confronts the industrial physician when he is called upon to treat a patient.

One might think that the industrial physician could dedicate himself to therapeutic tasks without undue interference. But his responsibility does not stop there, as he must not only care for the health of the worker but also protect the rights of the worker. Medicolegal criteria must be applied whenever the rights of the worker conflict with those of the employer.

The injured worker is interested in obtaining as much money as possible, and in giving the widest possible interpretation to laws and regulations. The employer, on the other hand, is interested in reducing expenses to a minimum compatible with labor peace and in the strictest possible interpretation of the law.

In the solution of concrete cases, the industrial physician is faced with opposing monetary interests where fairness often depends upon shrewd medical evaluation. The work here is of a medicolegal nature rather than of therapeutic or preventive assistance.

When medicolegal problems appear, presumptions of sincerity disappear, mutual confidence between patient and physician is dissolved, and a regretful atmosphere of distrust is created. Both the employer and the worker ask the physician for often unscrupulous weapons.

The industrial physician who sees the patient first, can often discover evidence of the accidental or toxic nature of the disease; evidence which might later escape investigation. The observation of ecchymoses or superficial excoriations very often reveals a trauma which might be the cause of the illness. In such a case, the medicolegal importance of the lesion is far greater than its clinical significance. Proof of acute pain of short duration might be extremely important in determining the accidental origin of a hernia. These are examples of how links between accident and disease can be established, which is a general medicolegal problem of the greatest juridicial importance. In industrial legal medicine it is called the problem of "an debeatur"; that is, the problem of whether or not the right to compensation exists. For the physician, this means the ability to pick up elements of proof: first, actual occurrence of an accident (marks of violence); second, existence of somatic or functional alterations; third, causal links between the two. The earlier this can be done, the more effective it will be.

In other words, the work of the physician is made difficult not only by the atmosphere of distrust but also by the fact that he is faced with medicolegal problems. These problems have been simplified to some extent by the existence of insurance against common sickness. This determines the fact that the injured worker can in any case claim an indemnity. But accident and sickness insurance are nearly always separate

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For several years DR. LATTES has been a Consultant in Legal Industrial Medicine in Buenos Aires, Argentina. His book, "Individuality of Blood," is considered a classic in its field, and has been translated into many languages. The article here is one of four lectures given by DR LATTES at the Chicago Medical School, December 5-10, 1949.

contracts, so that there is not only the problem of whether the worker should be compensated, but also the new problem of *who* shall compensate him. In Argentina, for example, the employer must compensate the worker for common sickness by paying up to six months' salary; whereas the insurance company is considered responsible for accidents and occupational diseases and will pay half of the worker's salary for an indefinite period of time.

Therefore, if the worker suffers a minor accident and looks forward to a short period of incapacitation, he chooses to be compensated by the employer, forgetting the medicolegal reports which establish the accident and cheating the workmen's compensation law. This creates, of course, endless disputes between employer and insurance company. On the other hand, both employer and worker are interested in considering any sickness of long duration, or for which permanent incapacitation is foreseen, as accidental or occupational and, therefore, compensable by the insurance company for an indefinite time. The dispute is especially bitter in cases of tuberculosis which in general, cannot be considered accidental nor, in most cases, an occupational disease. The definition of incompensable tuberculosis has been the object of many legal controversies. Out of these has grown the legal recognition that tuberculosis can be considered an accident not only when one deals with the so-called traumatic tuberculosis, but also when the work is instrumental in revealing or awakening or aggravating a pre-existent latent disease, a fact which happens quite often. This concept has been extended to other diseases such as rheumatism, spondylosis, varicose veins, pulmonary emphysema, arteriosclerosis, myocarditis, and even hernia. The importance of this tendency to erase all differences between sudden damaging causes and slow ones, between exclusive and concomitant causes, in a word, between accident and occupational disease, has reached the point of admitting that any lesion or disorder, connected in any way, even partially, with work, deserves legal protection.

This concept transforms practically all workers' sicknesses into occupational diseases and implies a deep revolution in all legal protection, giving it the much broader outlook of social security.

Should this concept be reaffirmed, we would not escape the conclusion that there should be no distinction between industrial risk and risks of common sickness. Nevertheless this concept does not find much acceptance—not even in England and in Russia, where the socialization of medicine is most prevalent.

The doctors, after establishing the facts on which the right to compensation is based, and who is responsible for it, must then evaluate the extent of the damage. The part of this task best known to the public is that reserved to the forensic physician proper, who evaluates permanent disability in terms of percentage of incapacitation; a duty of considerable moral and economic consequence. A complete quantitative evaluation, however, is not only measured in terms of amount of physical damage and inability to work, but also in terms of duration.

ILLNESS, in general, has been defined as a pathologic process in evolution. In the industrial practice, this concept has been limited to that of a pathologic process that requires medical treatment and, ipso facto, determines absolute or partial incapacity for work.

This definition, in my opinion, is mistaken and harmful, even though it has been accepted by most legislations, which prescribe that there cannot be compensation unless there is interruption of work.

From a medical point of view, it is obvious that interruption of work cannot be the only criterion of the worker's right to medical assistance. As a matter of fact, accidental damage and even diseases such as syphilis, allergy, or tuberculosis require medical care often without the need to stop work. Legal and medical practice do not seem to allow for the principle that an injured or a sick man has a right to treatment while he is working, a principle which would be of great benefit to the economy of a country. Furthermore, one must remember that, even in the most evident case of sickness, to determine the duration of inability to work is a difficult task indeed, which is of utmost economic importance. One cannot wait for a complete anatomical or functional cure or for a perfect stabilization of the consequences before restoring the worker to his job. Rather, one must use balanced medicolegal judgment combined with a good knowledge of the specific tasks of the worker and of the nature of his industrial tools. The end of temporary incapacity does not in general coincide with the clinical recovery. One must also consider that the period of convalescence belongs to the post-clinical period, and that progress can be very slow. It is a very delicate medicolegal problem to know when to terminate officially the convalescence by discharging the patient. In this decision, medical opinion often interferes with the interests and personality of the injured worker—who can be brave or cowardly, optimistic or hypochondriac, anxious to return to normal activity, or desirous of taking refuge in the accident law. The decision is even more difficult in the case of the individual who takes on a new trade where his disability will not hamper him.

There is no doubt that monetary compensation, although just and indispensable, lengthens the period of sickness; for the uncompensated patient feels compelled to return to work. In order to convince a recalcitrant worker to accept discharge from the hospital and return to his job, insurance doctors used to emphasize the advantages of recovering full salary. Now, in Argentina, this inducement no longer exists; for recent trade-union agreements force the employer to pay full salary (if he is not insured) or to

make up the half-salary paid by the insurance company during incapacity of the worker. Consciously or unconsciously, the worker often tends to prolong incapacity by pretending still to suffer pain or functional limitation. This means, of course, serious loss of production and disturbances in the labor balance. Insurance doctors and medical officials must face this problem even though, in the interest of preventing damage to the industrial economy, it may become necessary to make discharge from the hospital compulsory when such is justified by the objective condition of the patient. When monetary interests are involved, the physician must always suspect malingering. Furthermore, even when these difficulties have been overcome, one must still determine to what extent the specific anatomical or functional damage interferes with the ability to work. The two concepts of anatomical and functional damage, and of inability to work are not necessarily superimposed. Doctors who have not given enough thought to the legal side of their activity tend to identify these two concepts. Some go so far as to admit a certain loss in ability to work as the result of injuries such as the callus of a fracture or the loss of a testicle, even when there is no evidence of functional damage. But damage to certain functions, such as chewing, and those of the genital or olfactory systems, does not alter the ability to work. It is also admitted generally that slight loss in eyesight or hearing does not diminish working power to any practical extent.

On the other hand the capacity for work should be understood not in a strictly functional way but in an economic way, that is, as a limitation to or loss of the ability to earn a salary by working. Certain other consequences which do not affect the actual ability to work, such as damages to the esthetic appearance of a worker, should also be evaluated and compensated, as they diminish his chances of employment.

THE real difficulty in the medicolegal practice of compensation, and the clash of interests make controversies inevitable. It is easy to make the mistake of thinking that the doctor wants to support the employer's interests because he, himself, is dependent upon them; or that the doctor, in his human piety, tries to help the victims of misfortune. One should remember that the aim of social laws is justice and not abuse; and, if it be true that these social laws should be interpreted with broad human vision rather than narrow adherence to the letter of the law, it is politically and economically necessary to consider all of the interests involved.

In every case, the medicolegal expert holds the key to the problem because, nearly always, the controversy is of a medical nature.

The question is, should the physician advise the judge as an expert, or should he be part of a judicial body. At different times and in different countries, both systems have been followed. In my country, Italy, I support strongly the institution of a labor tribunal manned by specialized and competent judges.

The labor tribunal can give the best results when complemented by systematized medical information allowing technical discussion of both sides of the problem.

I do not wish to suggest that doctors should defend opposite interests. This is a job for lawyers. Our work consists, above all, in the defense of scientific truth. It should be emphasized, however, that, relative to the judicial problem, truth may have several aspects and therefore legitimate, though opposite, interests may be considered.

Medicine is not mathematics. Nobody is amazed if two clinicians, after examining the same patient, express different or even opposite diagnostic, prognostic, and therapeutic opinions. In legal medicine, discrepancies can occur, since the will and interest of the injured, as well as his legal worries, interfere. This is part of the normal order of things. A quiet and objective discussion will dispel discrepancies or, at least, weaken them. The main thing is that the discussion should be carried out in good faith with no end other than to serve the truth.

Medicolegal doctors should adjust themselves to the idea that the personal advantage of each individual must be limited by what is right in order to stop excesses which could affect the national economy.

Protection of the worker does not entail support of exaggerated claims or attempt to get the maximum amount of money, but the defense of legitimate interests of the working classes. Because of this, the most qualified judicial and technical defense is the one which comes from trade unions rather than the one from private individuals. In the same way, insurance companies should not defend the selfishness of a narrow-minded employer but act impartially. In the long run only in this way will the best interests of the worker and of the nation be served.

Physicians who have medicolegal functions of any kind in the sphere of labor should realize that they are performing in the public interest and that the apparently inhuman function of objectively evaluating human sorrow in terms of money is not a consequence of indifference but, rather, of a great understanding of the ethical and economic importance of their decisions.

The legal industrial doctor should build up in himself, day after day, the spirit of a judge who has a high and difficult mission, and not the spirit of a professional counsel who tries to sustain good and bad causes.

Industrial legal medicine, a promising branch of medical practice, should be one of the forces toward elimination of contrasting interests between the various factors of production. But only through impartial and disinterested action, inspired by ethical and scientific ideals, will it deserve the consideration and respect of the public and of the magistrates who are responsible for social equilibrium.

# Inguinal Hernia: Delayed vs Early Ambulation

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THIS analytical and comparative study of the occurrence, repair and recurrence is based upon 200 consecutive unselected cases of surgically repaired inguinal hernia. The entire group is divided into two sub-groups. The first 100 cases were those managed postoperatively according to the time-established routine of prolonged postoperative bed rest and late return to work. The next 100 consecutive cases presented are those that were postoperatively ambulated early and were permitted to return to their work within four weeks. The purpose of the study is to demonstrate, by factual evidence, the various general and specific benefits gained by the early ambulated group and incidentally to review and evaluate the results gained and the recurrences according to the varieties of inguinal hernia and the types of surgical repair. To allow an ample interval for recurrences, there has been a waiting period of two and a half years since the last case was operated.

The cases comprising this study are those that were operated in accordance with the existing Workman's Compensation Act of the State of Michigan for an automobile manufacturing company employing about 12,000 people during the period of this study. The first case was operated July 17, 1940, and the last case February 19, 1947. The date of division between the two successive groups is November 14, 1944. There has been no selection of cases other than their consecutive chronological appearance. The local general hospital and industrial medical record of each case was studied, and many of the group were called in for re-examination prior to this report.

It may be of interest that during this entire period of six and a half years a total of 277 employees claimed hernia associated with their work. Of this number 235 were approved under the Act, of which 35 did not elect surgical repair. The remaining 200 comprised the number of cases under scrutiny. The average number of hernias occurring in this group of 12,000 during this period was slightly more than 42 per year.

This information was gained by examination of the occupational claims of the entire group of 200 (Table I). All fell into one of the above categories. Under the Workman's Compensation Act of the State of Michigan a claim of hernia is allowed only if it is "recent in origin and results from a strain arising out of and in the course of employment and is promptly reported to the employer." All claims were investigated as to their actuality or possible potentiality and, as mentioned in the previous paragraph, only 15% of those claiming occupational hernia did not meet the limitations of the Act. Any statistical interpretation of claims connected with the industrial occurrence of inguinal hernia must be done with a certain leniency, however, as such claims of hernia arising out of occupational causes are often made by the employees with the knowledge that a lack of definite occupational history would lead only to rejection of their claim.

TABLE I.
ATTRIBUTED CAUSE

| | | |
|---|---|---|
| Lifting at work | 85 | 42.5% |
| Pushing at work | 25 | 12.5% |
| Slipped on floor | 10 | 5.0% |
| Direct inguinal trauma | 5 | 2.5% |
| Acquired at work | 75 | 37.5% |

## Age and Sex

THE average age of both groups studied was 42 years; the youngest was 19, and the oldest 69 years old. There were 198 men and two females. Each case was an active, otherwise healthy employee, and each case was elective.

TABLE II.
ANESTHETIC

| Agent | Delayed Group | Early Group | Total |
|---|---|---|---|
| $N_2O$—Ether | 68 | 3 | 71 |
| Spinal | 32 | 97 | 129 |

As shown in Table II the greater majority of cases received a spinal anesthetic. Beginning in 1942 this type of anesthesia, because of its advantages in hernia repair, has been generally employed, and of the early ambulated group only three had inhalation anesthesia. Because of the otherwise healthy condition of the hernia patient, it is a safe ideal agent having practically little postoperative effect and providing excellent relaxation of the lower abdominal musculature, an important requirement for good exposure and surgery. Of the 129 patients receiving this anesthesia only four complained of postoperative headache which lasted only for several postoperative days and was present only when in the upright positions.

Table III shows the complete surgical diagnosis for each of the two groups divided into a primary sub-group indicating a first repair and a secondary sub-group indicating those patients who had previous surgical repair (elsewhere) prior to their claim which included them in this chronological survey. They were of course all recurrent but, to avoid confusion for the purpose of this study, they are not so labeled.

As shown there were a total of 179 primary or new cases and 21 secondary or previously

TABLE III.
SURGICAL DIAGNOSIS

| | Primary | | Secondary | | |
|---|---|---|---|---|---|
| | Delayed | Early | Delayed | Early | Total |
| Indirect | | | | | |
| Right | 36 | 38 | 0 | 4 | 78 |
| Left | 32 | 30 | 2 | 3 | 67 |
| Bilateral | 14 | 11 | 0 | 0 | 25 |
| Direct | | | | | |
| Right | 1 | 2 | 4 | 0 | 7 |
| Left | 2 | 0 | 2 | 0 | 4 |
| Bilateral | 1 | 5 | 1 | 1 | 8 |
| Combined | | | | | |
| Unilateral | 0 | 2 | 1 | 1 | 4 |
| Bilateral | 0 | 2 | 0 | 0 | 2 |
| Bilateral Different | 3 | 0 | 1 | 1 | 5 |
| Subtotals | 89 | 90 | 11 | 10 | |
| Total | 179 | | 21 | | 200 |

SUB-TABLE III.

| | Unilateral | Bilateral | Total |
|---|---|---|---|
| Delayed Group | 80 | 20 | 120 |
| Early Group | 80 | 20 | 120 |

operated cases. The length of time elapsing between the date of their first operation and the recurrence in the secondary group varied greatly, the longest period being 22 years and the shortest less than one year.

The diagnosis of indirect hernia pre-supposes the existence of a well defined hernial sac at the internal ring. The diagnosis of a direct hernia was made only in those cases which exhibited a definite sac protruding through the inguinal floor. The inguinal floors of all cases of indirect hernia were examined digitally after opening the sac and, unless there was a definite palpable sac admitting the finger, no diagnosis of associated direct hernia was made. Often, at operation, when the patient is well relaxed under spinal anesthesia it is possible to insert the examining finger into the opened indirect sac and push the inguinal floor ahead of it anteriorly. This, in the author's opinion, did not constitute a specific or true direct defect and was not so classified. A total of five cases (2.5%) had a definite direct defect on one side and an indirect defect on the other. Four cases (2%) had both direct and indirect defects on the same side, and two cases (1%) had both direct and indirect defects on both sides. Of the primary, previously unoperated group, there was a total of 161 hernias (84%) and only 11 true direct hernias (6.1%).

A division of the delayed and early ambulated groups according to whether they presented unilateral or bilateral defects (Sub-Table III) reveals that each group had exactly the same number of cases, 80 unilaterals and 20 bilaterals. Counting the bilateral cases as presenting two hernias, each group, therefore, had exactly 120 hernias. Because of this exact similarity in count, it is felt that the total number of cases comprising this report is sufficient to form a solid basis for a comparative study.

Only three basic types of hernia repair were used (Table IV). The choice of the operation was made or modified according to the character and nature of the hernia and evaluation of the

TABLE IV.
TYPE OF SURGICAL REPAIR

| | Delayed Group | Early Group | Total |
|---|---|---|---|
| Ferguson | 4 | 71 | 75 |
| Modified Bassini | 59 | 5 | 64 |
| McArthur | 57 | 44 | 101 |
| Total | 120 | 120 | 240 |

anatomic structure of the inguinal region presented after surgical exposure and exploration.

It is not the purpose of this report to discuss or evaluate the myriad procedures, and techniques employed for each group remained identical. Only brief mention is made of the methods used which are as follows:

1. *The Ferguson*—High ligation of the indirect hernia sac only. Cord replaced and external aponeurosis closed with continuous Chromic 00.

2. *The Modified Bassini*—High ligation of the sac, transposition of the stump, and approximation of the transversalis fascia to the inguinal or ileopectineal ligament. Generally this repair was completed with interrupted Chromic 00 sutures. The external aponeurosis was closed with continuous sutures of the same material.

3. *The McArthur*—High ligation of the sac and autoplastic approximation of the transversalis fascia to the inguinal or ileopectineal ligament with a strip of external oblique aponeurosis. Same closure.

## Postoperative Management and Course

THE essential difference between the two otherwise identical groups under study was that the first group was handled according to the time-honored routine of enforced and complete postoperative bed rest for a period of not less than an average of 13 days. The second group was ambulated early, that is, they were not allowed to remain in their beds for a period of longer than 24 hours postoperatively. At first the initial adventure out of bed was generally limited to standing, with walking permitted only on the second postoperative day. During the past few years, however, the patients have been permitted not only to walk about on their first excursion out of bed but many have walked to and used the hospital bathroom facilities. No patient has been discouraged from exercise up to the point of fatigue. Perhaps because these patients were otherwise in a state of good health, they have undoubtedly been more active as a group than other types of patients who are ambulated early. They are shown the proper methods of arising and getting back into bed, and after the first trial very few have had to have any additional help or aid. It was found that no dietary restrictions were necessary in the early group and, although no accurate compilation was made, it was found that the need for postoperative sedation was markedly decreased.

Other, often described, advantages of early rising were frequently observed. Avoiding an involved specific tabulation of each complication,

TABLE V.
ANALYSIS OF COMPLICATIONS

| | Delayed | Early |
|---|---|---|
| Gastro-intestinal | | |
| Marked P.O. vomiting | 13 | 2 |
| Distension-intubation | 17 | 0 |
| Severe hiccough | 1 | 0 |
| Pulmonary | | |
| Bronchitis-pneumonitis | 16 | 9 |
| Pneumonia | 3 | 0 |
| Vascular | | |
| Embolism | 1 | 0 |
| Phlebothrombosis | 3 | 0 |
| Genito-urinary | | |
| Urinary retention | 19 | 4 |
| Total | 73 | 15 |

a general summation according to the respective physiological system has been made in Table V which outlines briefly the more marked differences.

Comparative differential tabulation of the postoperative complications occurring in both delayed and early ambulated groups illustrates very clearly the marked reduction of these factors when the patient is not invalided to his bed (Table V). For brevity and clarity all of the complications have been divided into their respective physiological groups.

The gastro-intestinal sequelae included severe and prolonged vomiting, dynamic ileus, leading to marked distension requiring intubation, etc. There were 31 such cases in the delayed group and only two in the early group.

Pulmonary complications included tracheobronchitis, pneumonitis and pneumonia, and also showed a similar reduction of from 19 to nine cases.

The vascular complications were three cases of phlebothrombosis occurring in the delayed group. These three cases resulted in permanent-partial disability and have required special work placement, and all recurrently developed static indolent ulcers, etc.

The genito-urinary complications, all of which were cases of prolonged urinary retention, were reduced from 19 to only four. All of the four cases in the early group occurred soon after this method of management was started. Since the patients have been encouraged to use the hospital bathroom facilities directly on their first occasion of rising, there have been no cases of retention.

In addition to these specific benefits mentioned, the early ambulated group exhibited in general a healthy vigorous attitude. There was a great deal less postoperative invalidism, and most of this group requested early discharge from the hospital. The delayed group were uniformly kept in their convalescent stage for four weeks after hospital discharge before returning to work. This period was shortened to three weeks for the ambulated group. This extra week, together with the week of hospitalization saved, meant that the early group returned to work an average of two weeks before those of the delayed group. The average figures for each group are given in Table VI.

TABLE VI.

| | Delayed Group | Early Group |
|---|---|---|
| Postoperative day up | 13.22 | 1.5 |
| Days hospitalized | 14.25 | 8.49 |
| Days off work | 42.79 | 30.78 |

## Analysis of Recurrence

THERE were a total of 13 recurrences for the entire number of cases studied, eight occurring in the delayed group and five in the early ambulated group. Analysis of these recurrences is made according to the tables of results and discussions as follows:

THE DELAYED GROUP: Detailed tabulation (VII) reveals that there were a total of eight recurrences in the delayed group. No marked variation in age was noted and all were male patients. Five of the group returned to the author for further surgery, permitting an exact diagnosis and evaluation of the original repair. One case was re-operated elsewhere and the information on diagnosis was made from his hospital records. Two cases did not elect further surgical repair, both continuing at work wearing trusses. There were three unilateral indirect hernias followed by unilateral direct recurrences; one indirect followed by an indirect; one bilateral direct followed by a unilateral direct, and, oddly, one direct followed eight months later by an indirect hernia. Of the eight cases four had modified Bassini repairs and four had McArthur fascia repairs. They recurred at varying intervals of from three months to five years. All were ambulated late and returned to work in about six weeks. Of the five cases that were operated again, all were apparently well without recurrences to date. Only two of the group were considered to have other than uneventful postoperative convalescences, and none had any lasting disability.

TABLE VII.
DELAYED GROUP RECURRENCES

| No. | Case | Age | Hernia | Repair | P.O. Day up | Comp | Rt. Wk. | Mo. Rec. | Type Rec. | Repair | P.O. Day | Comp. | Rt. Wk. | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | G.C. | 42 | L. Ind. | Mod. Bass. | 11 | No | 43 | 3.5 | L. Dir. | McA. | 12 | No | 42 | OK |
| 2. | A.F. | 58 | Rec. R. Dir. | Mod. Bass. | 13 | No | 43 | 59 | R. Ind. | Ferg. | 1 | No | 42 | OK |
| 3. | W.V. | 47 | Bil. Ind. | McA. | 13 | G.I. | 42 | 15 | L. Dir. | Left. Empl. | | Repaired outside | | |
| 4. | C.R. | 41 | R. Ind. | Mod. Bass. | 13 | G.I. | 42 | 12 | R. Dir. | McA. | 13 | No | 43 | OK |
| 5. | F.O. | 49 | Bil. Ind. | Mod. Bass. | 13 | G.I. | 42 | 30 | ? | Wearing truss and working | | | | |
| 6. | E.P. | 46 | Rec. L. Dir. | McA. | 13 | No | 42 | 5 | ? | Wearing truss and working | | | | |
| 7. | T.A. | 42 | Rec. Bil. Dir. | McA. | 13 | No | 42 | 12 | Bil. Dir. | McA. | 13 | No | 41 | OK |
| 8. | O.H. | 56 | L. Ind. | McA. | 13 | No | 42 | 8 | L. Ind. | Ferg. | 1 | No | 28 | OK |

TABLE VIII.
EARLY GROUP RECURRENCES

| No. | Case | Age | Repair | Repair | P.O. Day up | Comp. | Rt. Wk. | Mo. Rec. | Type Rec. | Repair | P.O. Day | Comp. | Rt. Wk. | Result |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. | F.S. | 40 | R. Ind. | Ferg. | 1 | No | 28 | 3 | R. Ind. | Ferg. | 1 | No | 28 | Rec. Op. outside |
| 2. | C.K. | 55 | R. Ind. | Ferg. | 1 | No | 28 | 14 | R. Ind. | Ferg. | 1 | No | 28 | OK |
| 3. | G.B. | 45 | R. Ind. | Ferg. | 7 | Scrotal hematoma | 33 | 15 | ? — | Working, no truss | | | | |
| 4. | C.V. | 53 | Bil. Ind. | McA. | 1 | No | 28 | 16 | Bil. Dir. | Mod. Bas. | 1 | No | 28 | R. side rec. 7 mo. reop. O.K. |
| 5. | E.M. | 43 | Bil. Dir. | McA. | 1 | No | 28 | 32 | L. Dir. | Mod. Bas. | 1 | No | 28 | OK |

Of interest is Case No. 2 who was an original recurrent case, having been operated upon elsewhere two years previously for a direct hernia, and was found to have a recurrent direct. This was repaired with the modified Bassini method. Five years later he reported back with his third recurrence which was found to be a small indirect type for which a high sac ligation only, according to the Ferguson method, was done with evident success.

Case No. 8 had an indirect hernia repaired by high ligation of the sac and repair of the floor by the McArthur method. Eight months later he reported back with another indirect hernia which was repaired by sac ligation only, with success.

There were, therefore, eight recurrences in the delayed group which totaled 120 hernias, for a percentage recurrence of 6.6%.

THE EARLY GROUP: Repeating a similar detailed tabulation for the recurrences of the early ambulated group reveals that there were a total of five, or three less than the delayed group. Again, no marked variation in age was noted, and all were males. Of these, one did not elect further surgery (the only one having any complication). The rest were re-operated, again permitting accurate evaluation and diagnosis. Two had indirect hernias followed by indirect; one indirect followed by a direct; and one bilateral direct followed by a unilateral direct. These recurred at varying intervals of from three months to 32 months after repair. Three had the Ferguson method repairs, and two had McArthur repairs. Two of the five cases are of particular interest.

Case No. 1, an original indirect hernia, had a Ferguson repair and, following an uneventful convalescence and return to work, recurred after three months. At re-operation it was found that he had another large indirect recurrent hernia which was again similarly treated by the Ferguson method. Again, following uneventful convalescence and return to work, he reported with another recurrence four months later. This was re-operated elsewhere, where it was found that he was suffering from his third recurrent indirect hernia. His surgeon elected a radical repair with excision of the cord and testicle and complete abdominal closure.

Case No. 4 originally a bilateral indirect type, had McArthur repair. Following uneventful recovery and return to work in four weeks, he recurred 16 months later, this time presenting bilateral direct defects. These were repaired by the modified Bassini method, and seven months later he again presented a recurrence, this time a unilateral right direct defect. This was again successfully repaired with the same technique.

There were, therefore, five recurrences in the early group which totaled 120 hernias for a percentage recurrence of 4.1%.

Considering the division of the entire 200 cases according to the original surgical diagnosis as in Table IX shows the recurrences divided into two sections according to the original condition of the patient, that is, whether the case was new or had had previous surgery.

A further division of each category into delayed and early ambulation is given in Table X. The recurrence rate of the primary group, both delayed and early ambulated cases, is identical at 5.5%. The delayed secondary repairs show a marked rise in recurrence rate to 27.2% whereas there were no recurrences in the early ambulated secondary group. Considering the entire group as represented by 200 individuals the combined recurrence rate was 6.5%.

Table XI is a consideration of each group as presenting 120 hernias (80 unilateral and 20 bilateral) and dividing the two groups according to unilateral or bilateral occurrences. No marked difference in recurrence is noted between the divisions yet the rate varies from a minimum of 3.7% for the early ambulated unilateral cases to 7.5% for the delayed bilateral cases, a difference of 4%.

TABLE IX.
SECONDARY RECURRENCES

| | | |
|---|---|---|
| 179 Primary Cases | 10 Recurrent | 5.5% Recurrence |
| 21 Secondary Cases | 3 Recurrent | 14.2% Recurrence |

TABLE X.
SECONDARY RECURRENCES ACCORDING TO GROUP

| | Cases | Rec. | |
|---|---|---|---|
| 179 Primary | | | |
| Delayed Group | 89 | 5 | 5.5% |
| Early Group | 90 | 5 | 5.5% |
| 21 Secondary | | | |
| Delayed Group | 11 | 3 | 27.2% |
| Early Group | 10 | 0 | — |
| Total | 200 | 13 | 6.5% |

TABLE XI.
UNILATERAL AND BILATERAL CONSIDERATION

| | Unilateral | Recurrent | | Bilateral | Recurrent | |
|---|---|---|---|---|---|---|
| Early Group | 80 | 3 | 3.75% | 40 | 2 | 5.0% |
| Delayed Group | 80 | 5 | 6.25% | 40 | 3 | 7.5% |
| Both Groups | 160 | 8 | 5.0% | 80 | 5 | 6.25% |

TABLE XII.
DELAYED GROUP

| | UNILATERAL | | | | | | BILATERAL | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Indirect | Rec. | % | Direct | Rec. | % | Indirect | Rec. | % | Direct | Rec. | % |
| Modified Bassini | 41 | 2 | 4.87 | 7 | 1 | 14.2 | 15 | 1 | 6.6 | 1 | 0 | — |
| Ferguson | 2 | 0 | — | 0 | 0 | — | 2 | 0 | — | 0 | 0 | — |
| McArthur Fascial | 28 | 1 | 3.57 | 2 | 1 | 50. | 17 | 1 | 5.8 | 5 | 1 | 20.0 |
| Total—Delayed Group | 71 | 3 | 4.22% | 9 | 2 | 22.2% | 34 | 2 | 5.8% | 6 | 1 | 16.6% |

Total—Delayed Group, All Operations—Indirect 105; 5 rec.—4.7% Direct 15; 3 rec.—20%

TABLE XIII.
EARLY GROUP

| | UNILATERAL | | | | | | BILATERAL | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Indirect | Rec. | % | Direct | Rec. | % | Indirect | Rec. | % | Direct | Rec. | % |
| Modified Bassini | 4 | 0 | — | 1 | 0 | — | 0 | 0 | — | 0 | 0 | — |
| Ferguson | 55 | 3 | 5.4 | 0 | 0 | — | 16 | 0 | — | 0 | 0 | — |
| McArthur Fascial | 19 | 0 | — | 1 | 0 | — | 11 | 1 | 9.0 | 13 | 1 | 7.6 |
| Total Early Group | 78 | 3 | 3.8 | 2 | 0 | — | 27 | 1 | 3.6 | 13 | 1 | 7.6 |

Total—Early Group, All Operations—Indirect 105; 4 rec.—3.8% Direct 15: 1 rec.—6.6%

The second section of the same table reveals again that there is a difference between the delayed and early ambulated groups in recurrent rates of both types. This amounts to 2.5% in favor of the early group. The percentage recurrence for both groups, all types, is 5.41%.

A comparison of the recurrences in the delayed group according to their method of repair and the nature of the hernia is given in Table XII. Of interest, in addition to the specific tabulations which reveal the differences and variations of recurrences according to type of hernia and repair, are the totals which show that the rate in the delayed group of recurrences was 4.7% for the indirect hernias against 20% for the direct types.

Table XIII is the identical data for the early ambulated group. Here the totaled difference between the indirect hernia recurrence rate of 3.8% and the direct hernia rate of 6.6% is less than in the delayed group which was 4.7% and 20% respectively. Comparison of other totals of the early group with the delayed group reveals that they are all less and show relatively more favorable recurrence percentages.

Table XIV totals the recurrences of the combined groups of delayed and early ambulation according to the method of surgery. The recurrence rates are within a 1.4% variation from the average, indicating that no one specific or particular method of surgical repair was markedly different or better than any other.

Comparing the over-all occurrence rate of 5.41% for 240 consecutive unselected hernias against the rates for any specific procedure or type of hernia will quickly give its relative value.

TABLE XIV.
COMBINED GROUPS, TOTAL RECURRENCES

| | Indirect | Direct | Both | Recurrent | % |
|---|---|---|---|---|---|
| Mod. Bassini | 75 | 26 | 101 | 6 | 5.94 |
| Ferguson | 75 | 0 | 75 | 3 | 4.0 |
| McArthur | 60 | 4 | 64 | 4 | 6.25 |
| Total | 210 | 30 | 240 | 13 | 5.41% |

## Economic Benefits of Early Ambulation

WORTHY of the serious attention of surgeons, patients, employers and others interested in reducing the costs of medical care at this time are the incidental advantages of early ambulation pertaining to reduction of prolonged unnecessary hospital care, early return to work, compensation costs saved, and increased earnings of the patients.

The average time in the hospital was 5.7 days less in the early ambulated group. Utilizing the then current ward rate of $8.00 per day as a hospital cost figure, each case therefore saved $46.08. The average return to work day for the early ambulated group was 30.7 days against 42.7 days for the delayed group, a saving of 12 days in compensation-paid costs. Utilizing an average of $3.00 daily cost ($21.00 per week) each case saved $36.00 in compensation paid.

The greatest saving to the early ambulated patients came from the difference in their personal incomes between the average weekly wage of $60.00* and compensation of $21.00 per week. These patients returned to work two weeks earlier and therefore increased their income (income minus compensation) amounting to $78.00 for their period of disability.

Each case therefore saved a total of $160.00.

## Summary

CRITICAL analysis has been made of 200 consecutive unselected cases of inguinal hernia. The first 100 represented cases of delayed, routine management followed by the next 100 cases managed by early postoperative ambulation. The age and sex of each group were the same. The comparative surgical diagnosis for each group was almost identical, and each group presented exactly the same number of hernias, 80 unilateral and 20 bilateral. Of the total 200 cases, 179 were primary or previously unoperated cases and 21 had had previous surgical repair.

*Average hourly rate weekly income for this group at the time of writing was actually more than $65.00 per wek.

Only three basic methods of surgical repair were used, the selection or modification decided at the time of surgical exposure and diagnosis. There was no appreciable difference in the recurrence rates as between any particular methods of surgical repair.

The early ambulated group had only 15 simple postoperative complications compared to 73 in the delayed group, three of which resulted in permanent partial disability.

The early ambulated group had an over-all occurrence rate of 4.1% compared to 6.6% for the delayed group, and further special comparisons by type of hernia, unilateral or bilateral occurrence, etc., revealed more marked differences.

The early group were discharged from the hospital six days sooner than the delayed group and returned to work two weeks earlier. These differences resulted in a definite and considerable economic saving to the patient.

### Conclusions

EARLY postoperative ambulation management of surgically repaired inguinal hernia results in reduced postoperative complications, earlier discharge from the hospital, shorter and improved convalescence, earlier return to work, economic savings to the patient, and, more important, a decided reduction in frequency of recurrence.

(300 North Chevrolet Ave.)

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## "Down the Road . . . ."

UNDER cover of the welfare state, this nation is being led down the road to socialism with all its blighting effects on individual incentive and personal responsibility. Compulsion is being substituted for liberty. The enormity of the crime of dragging down our nation, with our great natural resources, and our citizens imbued with the pioneer spirit, to the level of bankrupt nations without natural resources is inconceivable to our citizens. It is beyond their belief. And yet that is what is being done insidiously by deficit spending and by wasteful subsidies under the aegis of economic planning, slowly, craftily, step by step . . . . In this crisis we cannot delegate our individual responsibilities to others than ourselves. Together we have made a good start, but the decisive battle still lies ahead. Throughout the states many physicians have labored long and effectively. It is they to whom credit for our progress is due. Yet the majority of physicians, while convinced of the necessity for action, are still following their accustomed course of caring for their patients, apparently paying little attention to the social and economic dangers which threaten them and their country. Many have as yet done little but quietly approve what others are doing. Our educational campaign has been extended and actively carried on in the states. In some states close relations have been established between state organizations and the press, whose freedom is likewise constantly threatened. The real strength of American medicine lies in the personal patient-physician relation. It is this close relationship which the advocates of government medicine and socialism are trying to destroy. We must carry this campaign of education to the average citizen, who up to now has been pretty thoroughly misled as to the effects of nationalized medicine on his own welfare. We must stop talking to each other and talk personally to each citizen. There is no profit in converting our own converts. Every worker must be made aware of this present threat to his freedom. His doctor can do this better than anyone else. Time is required to unmask the false promises of certain politicians who, for their own aggrandizement, ignorantly have adopted the program of the enemies of our Republic. Not only you as members of the House of Delegates, but also every physician must enter the fight for preservation and continuing improvement of medical care of the people. Even more important is the preservation of American freedom and free enterprise now assailed by a ruinous socialism, which has failed and is now failing before our eyes in Europe. The medical profession must make every effort in cooperation with other agencies to provide adequate voluntary medical care and protection against catastrophic illness as provided in our Twelve Point Program. Preventive medicine and provisions for the care of the aged especially must be emphasized. Above all we must seek and secure full active cooperation of all members of the medical profession and unite our efforts with those of lawyers, businessmen, farmers, manufacturers and other groups who now recognize the threat of the socialist welfare state. By this combined effort we shall roll back the socialist flood that menaces our American freedom.

—From the Address by DR. ERNEST E. IRONS, A.M.A. President, at the Washington Session, December 6, 1949.

# The Occupational Adjustment of the World War II Veteran at an Atomic Energy Research Laboratory

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EACH day the news commentators make observations on the aftermath of World War II, and proclaim how the peace is being lost, or, occasionally, how it is being won. The once theoretical post-war problems have become a reality, and the manner in which these problems are seeing solution is evaluated constantly in the fields of international relations, economics and scientific development. The adjustments required in human relations are not so frequently discussed perhaps, but they are none the less real.

Cameron,[1] in 1944, stated that if successful reconversion of the soldier into civilian life can be achieved, post-war difficulties will be immeasurably lightened. The unprecedented millions of veterans have returned and have been absorbed, for the most part, into industry. This study purports to evaluate the occupational adjustment shown by a specific group of ex-military personnel employed at the Oak Ridge National Laboratory.

Atomic research and development, described during the war years as secret, urgent, and important, caused a tremendous upheaval in the status of a Tennessee hill section later to be known as Oak Ridge. Where woodland and rolling fields prevailed less than a decade ago, there now stands an extensive assemblage of buildings known as the Oak Ridge National Laboratory. Built by the Construction Division of E. I. du Pont de Nemours and Company, Incorporated, it has been known successively as Clinton Laboratories, Clinton National Laboratory, and Oak Ridge National Laboratory. Originally the plans called for operation of this plant for a two-year period only, but more recent developments have led to continuance of its operation and establishment of the Laboratory on a permanent basis. The years that have passed from the knee-deep mud of construction days and the lone tenant who, shotgun in hand, refused to leave the premises where his home had been, to the present plant buildings and organization have been a short interval in time, but a tremendous stride in achievement. Created in the press of a national emergency, the plant evolved only through the integration of all possible skill and speed. As construction proceeded, administrative policies had to be formulated, industrial organization developed, and personnel, many highly specialized, recruited from all over the country. All component parts had to be welded into a smoothly functioning, efficient and highly productive entity, an accomplishment achieved only through the closest cooperation of scientists, administrators and engineers.

The pressure for tangible results in those days was equaled only by the singularity of the circumstances. Industrial plants and communities had sprung up over night. All work was highly classified and in a relatively unexplored field, nuclear physics. There was a continuous search for improved processes, along with an eager quest for increased knowledge of the behavior and effects of radioactive material. Plutonium had to be produced and separated, individuals completely familiarized with specific chemical processes, tolerance levels for human exposure to radiation established, and problems of shielding solved, particularly as they applied to nuclear fission in the pile. All this had to be done in preparation for the commencement of operation of the plant at Hanford, Washington. Imagine, then, the living and working conditions, the sociological and psychological problems, and the excessive tensions and pressures which existed at that time.

Obstacles were overcome, but, with continued operation, came new challenges. As the plant grew, it encountered the same problem that industry as a whole was facing in the years 1944 and 1945, the shortage of personnel. An ever-expanding project, the Laboratory was concerned not only with retaining the current employees but also with obtaining additional workers. As a solution, in part at least, to this problem, a Special Engineer Detachment* of the Army was created to furnish technical personnel to the Manhattan District Project, the designated Army activity assigned all functions relating to atomic energy. Most of these soldiers were drawn from the Army Specialized Training Program, although some former employees of the Laboratory, upon induction, were assigned to the S.E.D. on the basis of training and experience they had received while working at Oak Ridge. These men were given various technical positions at the plant on the basis of need, and in the light of their respective qualifications. This was worked out, irrespective of military rank, by manage-

The work covered in this document was done under the auspices of the Atomic Energy Project.

*Hereinafter referred to as the S.E.D.

ment and the officer in charge of the S.E.D. participation at the Laboratory. The soldiers worked side by side with the plant's civilian employees, and carefully considered personnel policies were established to allow the greatest possible harmony in employee relations. When the S.E.D. personnel entered the plant gates, they, for all intents and purposes, became civilians, and were treated precisely as were all other employees. A new procedure in industrial employment practices, this innovation of the S.E.D. was adjudged by all to be highly successful.

The peak number of such military personnel employed at the Laboratory was between 120 and 130. Most of the soldiers continued their work until discharged from the service, but a few were transferred elsewhere at the time when overseas military needs were the greatest. It has been estimated that, of those assigned to the S.E.D., approximately 30% returned as civilian employees after discharge. Of the 500 employees of the Oak Ridge National Laboratory, with military service histories, reviewed for this study, there were found to be 47, or 9.4%, who had assignment with the Manhattan District Project as at least part of their service record. The greater portion of these served with the S.E.D., although some had other military connections with the Project. Most of them were associated with the Laboratory, but not all of them, since the S.E.D. supplied personnel to all operations of the Manhattan District Project.

With the exception of continually increased and improved facilities with resulting greater production, conditions remained relatively the same at the Laboratory until the end of the war. Then, like every other industry, Oak Ridge National Laboratory was faced with the problems of readjustment. Selective placement, the policy of matching the physical capacities of the prospective employee with the requirements of the position to be filled, was instituted for the veterans and non-veterans alike, and proved particularly useful in placing the physically handicapped veteran in a suitable position. Within the Personnel Department, there were interviewers in the Employment Section who were veterans themselves and who took every opportunity to assist the veteran. Because of their own military service backgrounds, these men were qualified to evaluate the applicant's service experience and to hire him for a position commensurate with his previous and service-acquired aptitudes. In this same department, the Employee Relations Section stood ready to offer assistance to the veteran on any problem relating to the functions of management. A Rehabilitation Service, working in conjunction with the local Veterans' Administration Office and the Office of Vocational Rehabilitation, was established in the Health Division to aid the veteran with such problems as those concerning his disability pension or his medical care for service-connected conditions. Every effort was made to receive the veteran in the manner most advantageous to him and to the Laboratory.

## Review of Literature

MUCH was written during the war in an effort to adjust the thought patterns of the civilian population to the problems that would exist upon demobilization. In giving insight into the psychological makeup of the successful soldier, Chisholm[2] presented the picture of the very confused economic and sociological background from which servicemen were drawn. They had to be re-educated to be good soldiers and made to realize that in war the group is more important than the individual. All issues were greatly simplified for these men, and they were impressed with their importance to the government. Upon release from the service, the ex-soldier must find the same need in the community for his services. Wolf[3] further amplified the socializing experience of military service and expressed the belief that the conflict between public living and private emotion was largely responsible for the inadequacy shown in adjustment to military life. When the soldier returns to civilian life, his new personality patterns must be discarded, but he cannot go back to being the same civilian that he was formerly. Cameron[1] felt also that there should be no attempt to foster a perpetuation of the armed forces groupings by segregation of the returned man from other civilians.

The problem of the disabled veteran has been dealt with extensively, particularly in relation to neuropsychiatric conditions. Knibb[4] stressed the fact that, when properly placed, the handicapped in many instances is a more efficient worker than one with no disability. The psychiatric aspect of rehabilitation was treated by Ebaugh[5] who emphasized that hospital-type services and treatment for psychiatric cases should be provided within the natural community setting, and by Clark[6] who demonstrated that the abnormal psychiatric conditions which have afflicted servicemen were not usually different from those among civilians. Valenstein[7] stated that treatment of veterans in terms of their combat experiences alone is inadequate, since the root of the trouble is likely to lie in past infantile conflicts. Both Clark and Cameron referred to the fact that many of the neuropsychiatric conditions discovered in the service developed in individuals who in civilian life had demonstrated a predisposition toward instability and maladjustment, a circumstance which was exaggerated by their service experiences. Whitaker[8] warned that many persons in industry are under more stress as a result of the war experience and that it is anticipated that emotional illness will develop in a greater percentage of employed men and women. Sprol[9] stressed that, provided the psychoneurotic veteran is placed properly, the attitude of his employer and fellow employees is more important to his adjustment than are physical factors and working conditions.

Many industrial organizations initiated special programs for proper placement of veterans. For example, the Budd Company tried to fit the man to the job and maintained a physical therapy

department. Among the results of their program, they found a noticeable effect on the safety record of the plant.[10] Consolidated Vultee Aircraft Corporation used selective placement along with on-the-job training.[11] Delco-Remy believed in putting the veteran back to work with as little fanfare as possible, enabling him to resume his duties on a completely normal basis. All veterans in the plant were questioned as to their service experience; then a survey was made of all jobs in the plant, classifying them as to physical requirements, type of work and factors involved.[12] In the New York Office of General Foods Corporation only four of 85 veterans had gone back to the same jobs with the same status. Veterans were not treated as a special class. [13] Subsidiaries of the United States Steel Corporation have found attitudes of returning veterans very good. Every veteran of 60,000 employed had had personal attention to help him orient himself on the job.[13]

Most of the literature relative to the adjustment being shown in industry by veterans has dealt with absenteeism, injury records or employee turnover, rather than an actual evaluation of job perfomance. A survey, conducted during wartime, of veterans in a large plant formerly manufacturing automobiles included ratings for the veteran on various evalution factors, graded on a scale of "above average," "average" or "below average." Ranking these by the percentage classified "average" or "above average" yielded the following: attention to safety regulations (98%), quality of work (97%), policing up of worker's part of plant (97%), attitude toward supervisors (96%), tardinesss (96%), cooperation and job attitude (94%), quantity of work (92%), and attendance (90%).[14]

## Design of Problem

CONSCIOUS of the part an industrial health department plays in relation to many of the veteran's problems of readjustment and as a direct result of work done by the Rehabilitation Section of the Health Division at the Oak Ridge National Laboratory, the Health Division felt that an evaluation of the adjustment demonstrated by the veteran on the job was necessary. As criteria for measuring this adjustment, which may be defined as the establishing of satisfactory relationships at the scene of employment, two measures were selected: the supervisors' ratings for job performance, and the Cornell Index (see page 49) for psychological adjustment. A group of 500 veterans, who represent better than 20% of the plant population, at the Oak Ridge National Laboratory was studied. Although military service at any time constituted the criterion for calling an individual a veteran, all of the 500 studied, with one exception, had their military service in the World War II period. Each veteran was interviewed individually, and asked to complete the Cornell Index, if this test were not already on file for him. His immediate supervisor or department head was interviewed also, with regard to the veteran's performance on the job, and the evaluation was recorded in relation to a specific rating scale.

Besides obtaining factual data from the veteran in the course of the interview, an effort was made to draw him into conversation so as to get an indication of his attitude toward his job, an expression of the effect any physical disability might have on the performance of his work and an understanding of any service-related or job-connected problem that he might have. He was reminded of the functions of the Rehabilitation Service, and many problems were brought to light on which the veteran had refrained, for one reason or another, from seeking assistance, and which was then taken up by the Rehabilitation Section.

From the compilation of all data and its statistical treatment, an evaluation of the adjustment demonstrated by the Oak Ridge National Laboratory veterans in their present occupations was obtained. It is believed that the veteran's job performance is comparable with that of non-veteran workers. He is not different basically from other workers, but is rather a typical worker who, although he may be laboring under a latent handicap brought to light by the stresses or strains of his service experience, functions well in the execution of his job. Specifically, data will be presented on the 500 veteran employees surveyed at the Oak Ridge National Laboratory in terms of their personal characteristics, their service-connected characteristics and their adjustment to present-day life as seen on the job. The relations between the military service characteristics of the veteran and two measures of personal adjustment will be determined through statistical evaluation of the data, from which findings an understanding of the factors that are related to varying degrees and types of adjustment will result.

## Statistical Procedures

IN THE first section of the study, dealing with the personal and service-connected characteristics of the veteran, the data for the 500 individuals surveyed are presented in combination with comparable data from other sources, and have been compared with these data by means of the $X^2$ test of significance. By taking the parent population, (either United States World War II veterans or employees of the Oak Ridge National Laboratory), as a normally distributed population, and the 500 veterans studied as a randomly selected sample from this population, the problem was resolved into a question of determining the probability that the differences between sample findings and the percentages of the parent group would occur by chance in any randomly selected groups from the parent population. When the probability of getting the number found for the Oak Ridge National Laboratory veterans was less than .05, that finding was designated as *significant*. In other words, by a *significant difference* it is meant that the difference in number or percentage, whichever is tested, is such that it would not have occurred by chance more than five times

in a hundred. Therefore, since the premise on which these comparisons have been based was that the study group was a sampling from the parent population, either of Oak Ridge National Laboratory employees or of veterans, a significant difference showed a selective factor at work that made the sample atypical of the parent population.

The .95 confidence level was maintained throughout the study. In dealing with the adjustment factor, supervisors' ratings, the *t* test of significant differences in means was used for all comparisons. In connection with this factor, also, o, or the standard deviation has been given. The *standard deviation* is a measure of the variation of the individual scores from their mean in terms of the original unit of measurement, so as to give a typical deviation. All statistics involving the supervisors' ratings were calculated on the basis of ungrouped scores, although tabulations present the data with the scores grouped. For the Cornell Index score groups, although the significant findings are designated in terms of percentages, the calculations for significance were based on the numbers represented by the percentages, and the $X^2$ method was used.

Where two distributions measuring the same characteristic were compared, each sub-group in a distribution was compared with the same subgroup in the other distribution. Where distributions for two separate characteristics were compared for the proportion of each possessing a common characteristic, the mean or the number in the subdivision having the characteristic to be tested was compared with that for the balance of the 500 individuals. In this latter case, the hypothesis of *independence* was set up. Where a significant difference was found, the hypothesis was rejected. At the .95 certainty level used, these assumptions are expected to be correct 95 times out of 100. The finding of no significant difference established independence with the same degree of certainty.

## The Findings

THE SEX distribution for Oak Ridge National Laboratory veterans was compared with that for World War II veterans, designated as Veterans Affairs Data,[15] and for the plant as a whole, designated as Atomic Energy Workers Data,[16] in Table 1. The percentage of females, 1.0%, was compared with 2.2% for veterans and 25.1% for atomic energy workers at this plant. A significant difference was demonstrated between the findings for the study group and for the Laboratory.

TABLE 1.
SEX DISTRIBUTION

| Sex | 500 Veterans Number | 500 Veterans Per Cent | Veterans Affairs Data*—Per Cent | Atomic Energy Workers Data†—Per Cent |
|---|---|---|---|---|
| Male | 495 | *99.0*‡ | 97.8 | *74.9* |
| Female | 5 | *1.0* | 2.2 | *25.1* |
| Significant Difference for 500 Veterans | | | No | Yes |

* Based on all World War II veterans. Statistics were compiled after July 25, 1947, which was the close of World War II service period.

† It should be noted that this study covered both workers employed and workers rejected for employment for physical reasons. The figures here cited under the heading "Atomic Energy Workers Data" are for those workers who were qualified physically for employment.

‡ Figures shown in italics herein and afterwards demonstrate a significant difference.

TABLE 2.
RACE DISTRIBUTION

| Race | 500 Veterans Number | 500 Veterans Per Cent | Veterans Affairs Data—Per Cent | Atomic Energy Workers Data—Per Cent |
|---|---|---|---|---|
| White | 482 | 96.4 | 91.2 | 91.8 |
| Non-White | 18 | 3.6 | 8.8 | 8.2 |
| Significant Difference for 500 Veterans | | | No | No |

The racial breakdown of 96.4% white and 3.6% non-white in Table 2 shows a lower per cent of colored in the present survey than the 8.8% for all veterans or the 8.2% for the plant. This difference was not statistically significant. By an actual check of the number of Negro veterans currently employed at the Oak Ridge National Laboratory, it was confirmed that the 3.6% in the sample of 500 is typical of all plant veterans. Negro workers at the plant fill laboring, laundry, cafeteria, custodial, and stores receiving and distribution jobs, and are employed as tool attendants.

Since age in itself is a limiting factor in military service, the age breakdown in Table 3 is given by five-year periods, as well as the standard 10-year periods. It was found that, while the Laboratory age distribution is somewhat unusual by virtue of the fact that nearly 85% of the personnel were under 40 years of age, 95% of the plant veterans were under 40 years old. In relation to the plant population, the study group had significantly more in the 20 to 29 year age group and significantly fewer in the fourth decade and aged 50 years and up. No test of significance was made with the available Army Data,[17] since these figures are not strictly

TABLE 3.
AGE DISTRIBUTION

| Age in Yrs. | 500 Veterans No. | 500 Veterans Per Cent | | Army Data* Per Cent | Atomic Energy Workers Data Per Cent | Veterans Affairs Data |
|---|---|---|---|---|---|---|
| 15-19 | 8 | 1.6 | 1.6 | — | 5.8 | |
| 20-24 | 137 | 27.4 | *65.4* | 20.1† | | |
| 25-29 | 190 | 38.0 | | 36.7 | *46.9* | |
| 30-34 | 97 | 19.4 | 28.0 | 24.0 | 31.6 | |
| 35-39 | 43 | 8.6 | | 12.8 | | |
| 40-44 | 20 | 4.0 | *5.0* | 6.5 | *11.8* | |
| 45-49 | 5 | 1.0 | | | | |
| 50 & up | 0 | 0 | *0* | | *3.9* | |
| Significant Difference for 500 Veterans | | | | Not Tested | Yes | |
| Average Age and Date Data Collected | | 28.1 6-30-48 | | 25.0 6-30-45 | 31.3 6-30-48 | 28.6 6-30-47 |
| Adjusted Av. Age on 6-30-48 | | 28.1 | | 28.0 | 31.6 | 29.6 |

* Individual ages are increased by three years.

† On the basis of the adjustment for date of tabulation, the figure shown for the 20 to 24 years age group actually covers only ages 21 to 24.

TABLE 4.
MARITAL STATUS DISTRIBUTION

| Marital Status | 500 Veterans* No. | 500 Veterans* Per Cent | Army Data† Per Cent | Veterans Affairs Data‡ Per Cent | Atomic Energy Workers Data§ Per Cent |
|---|---|---|---|---|---|
| Married | 386 | 77.2 | 43.7 | 60.0 | 69.5 |
| Single | 108 | 21.6 | 56.3 | 40.0 | 28.2 |
| Widowed | 1 | 0.2 | — | — | 0.6 |
| Divorced | 5 | 1.0 | — | — | 1.6 |
| Significant Difference for 500 Veterans | | | Not Tested | Not Tested | No |

* As of June 30, 1948.
† As of June 30, 1945; "married" included widowed, divorced and separated if there are children; "single" included widowed, divorced and separated if there are no children.
‡ As of June 30, 1947; classification was defined as "married" and "not married."
§ As of March 30, 1948.

comparable with the survey data, having been tabulated at a different time and relating to only one branch of the service. Visual inspection, however, reveals no great differences. While the study group approximated the average age for veterans as a whole, the average age of the plant veterans was about three and one-half years less than that found for the entire Laboratory.

In the marital status data presented in Table 4, the trend by date is quite noticeable and logical. The Army figures in 1945 show 43.7% married; the Veterans Affairs figures in 1947 show 60.0% married, and the 500 veterans in 1948 show 77.2% married, a typical post-war rise in marriage rates. The percentages indicated for the present survey were not significantly different from those for the entire plant. Neither the Army data nor the Veterans Affairs data were tested for significance, due to difference in definition of the classifications and the time element involved.

The following shows the occupational groupings used in Table 5 and gives some examples of occupations falling in the specific classes.

TABLE 5.
CHANGES IN BASIC TYPE OF OCCUPATION FOR 500 VETERANS

| Present Occupation | Prior Occupation: Professional | Semi-Professional | Clerical | Protective | Craft | Operative | Laboring | Custodial | Student (College & Post Graduate) | Student (Grammar & High School) | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Professional | *77** | 5 | 3 | — | 7 | — | 2 | — | 28 | — | 122 |
| Semi-Professional | 3 | *17* | 5 | — | 8 | 4 | 3 | — | 2 | 5 | 47 |
| Clerical | — | 3 | *28* | 1 | 11 | 3 | 11 | — | — | 6 | 63 |
| Protective | — | 2 | 10 | *7* | 21 | 5 | 24 | — | — | 7 | 76 |
| Craft | 1 | 1 | 7 | — | *61* | 4 | 11 | — | — | 9 | 94 |
| Operative | — | 2 | 6 | — | 12 | *13* | 9 | — | 2 | 5 | 54 |
| Laboring | 1 | — | 3 | — | 4 | 1 | *22* | 1 | — | 4 | 36 |
| Custodial | — | — | — | — | — | — | 6 | *2* | — | — | 8 |
| Student (College & Post Graduate) | — | — | — | — | — | — | — | — | — | — | — |
| Student (Grammar & High School) | — | — | — | — | — | — | — | — | — | — | — |
| Total | 82 | 30 | 62 | 8 | 124 | 35 | 88 | 3 | 32 | 36 | 500 |

* Italicized figures represent veterans not changing their basic type of occupation.

Professional: Chemist, physicist, engineer, managerial personnel.

Semi-Professional: Research assistant, laboratory technician, draftsman, instrument checker.

Clerical: Typist, clerk, stores attendant, secretary.

Protective: Patrolman, fireman.

Craft: Mechanic, painter, pipefitter, carpenter, baker, welder.

Operative: Chemical operator, mechanical operator.

Laboring: Heavy laborer, window-washer, unskilled laborer.

Custodial: Janitor, matron, laboratory attendant.

In studying the occupation of the veteran, there were two considerations, his present occupation at the Laboratory and his prior occupation, defined as the type of occupation followed by the individual for the major part of his employed time, exclusive of military service time, before his employment at the Oak Ridge National Laboratory. This was not necessarily his occupation directly before going into the service or directly before coming to the Laboratory, although, in many cases, these are the same. The changes in basic types of occupations are interesting in themselves, since, if those previously without gainful occupation are excluded, 46.3% of the study group are found to have changed their basic type of occupation. Table 5 shows the prior and present occupational groups, itemizing the prior occupations of those within a present occupation category. It may be noted that all prior occupational groups except professional, protective, custodial, and college and post-graduate students, tended to distribute themselves in most of the other occupational groups under present occupation. From the clerical

TABLE 6.
OCCUPATIONAL DISTRIBUTION SUMMARIZED

| Occupation | 500 Veterans: Prior Occupation Number | Prior Occupation Per Cent | Present Occupation Number | Present Occupation Per Cent | Atomic Energy Workers Data Per Cent |
|---|---|---|---|---|---|
| Professional | 82 | 16.4 | 122 | 24.4 | 34.6 |
| Semi-Professional | 30 | 6.0 | 47 | 9.4* | — |
| Clerical | 62 | 12.4 | 63 | 12.6 | 22.5 |
| Protective | 8 | 1.6 | 76 | *15.2* | *6.1* |
| Craft | 124 | 24.8 | 94 | *18.8* | *10.7* |
| Operative | 35 | 7.0 | 54 | *10.8* | *5.2* |
| Laboring | 88 | 17.6 | 36 | 7.2 | 11.3 |
| Custodial | 3 | 0.6 | 8 | *1.6* | *9.7* |
| Student (College & Post-Graduate) | 32 | 6.4 | — | — | — |
| Student (Grammar & High School) | 36 | 7.2 | — | — | — |
| Significant Difference for 500 Veterans by Present Occupation | | | | | Yes |

* In the test for significance, this group had to be absorbed by the other classifications. From the original data it was determined that the semi-professional group should be allotted to the professional and clerical groups with 28 individuals classified as professional and 19 classified as clerical. This gave the following percentages for comparison: Professional—30.0%; Clerical—16.4%.

group, craftsmen, operative and laboring personnel, the largest number of the group who changed occupations went into protective work; in the case of laborers, the number changing to the protective group was even greater than the number who remained laborers. There appears to be somewhat of a trend toward more skilled occupations, but no definite conclusion can be reached in this regard. Ginzberg[18] has observed that an appreciable number of unskilled selectees, on discharge, sought work at trades for which they had been trained while in the Army. Some had learned carpentry, others sheet metal work, still others had become cooks. Upon their return to civilian life, they sought to capitalize on these new skills. Statistical comparison of the number in the various prior and present occupational groups demonstrated a significantly greater number in the present occupation of protective worker and a significantly smaller number in the craft and laboring groups for present occupation.

Table 6 presents the comparison of the veterans' present occupations with the occupational distribution at the Laboratory. Here it is noted that the veterans were significantly higher in percentage of protective, craft, and operative workers, while they were significantly lower in percentage of custodial workers.

Considering the information garnered from Tables 5 and 6, then, the various occupational findings should be summarized. The number of protective workers among the veterans increased from eight by prior occupation to 76 by present occupation. This latter represents 15.2% of the veterans, while only 6.1% of the plant's employees are in the protective occupational group. This distinct occupational shift may be due to a desire on the veteran's part to continue in an occupation somewhat similar to military police service. It may be related to the individual's qualifications in the light of the Laboratory's employment demands. Without any particular training in another field, the veteran may have found that his best occupational opportunity lay in the protective field. It is obvious that military service did not draw proportionate numbers from all occupational classes, since some Selective Service deferments were granted to those in certain essential, highly specialized positions, and students at a higher educational level were sometimes deferred in order to allow them to finish their training. It is logical, then, that military service veterans would not necessarily follow the same occupational distribution as found in the Laboratory as a whole. The significant differences shown for the craft, operative and custodial groups in the comparison between present occupations of the veterans and all occupations at the Laboratory demonstrate the same type of differences that existed between the prior occupations of the veterans and all occupations at the Laboratory. In other words, if it is admitted that all occupations have not necessarily been represented proportionately in military service, these differences, although real, represent a characteristic of those having military service, but not a trend resultant from military service. The changes with a direct relation to military service appear to be centered around the high number in the protective occupational group by present occupation. That finding and a slight tendency toward up-grading as the result of military experience and service-acquired skills summarize the occupational characteristics of the veterans by present occupation.

In discussing educational attainment level, there are two basic reasons why a comparison between the plant veteran data and the Army data is not justifiable. No attempt has been made in the compilation of the survey information to distinguish between pre-war and post-war education, the latter being precluded from the Army data by the date of tabulation, June 30, 1944. Also, other branches of the service are represented among the 500 veterans, and there is reason to believe that the educational attainment level of the Army veterans is not necessarily typical of all branches of the service.

From brief appraisal, there is no important difference between the study group and the entire Laboratory as related to educational attainment level. There may be some real difference in the educational level of the plant veterans and veterans as a whole, since many of the jobs at the Laboratory demand higher educational requirements because of the type of work performed.

It is observed from Table 7 that over 33% of the study group have had some education beyond the high school level.

An individual's health status classification is assigned by the examining physician prior to placement on the basis of a physical examination, laboratory tests, and the Cornell Index personality inventory. This classification is adjusted by the medical examiner from time to time as the physical condition of the worker changes. The health status classification symbols standard at this plant, as shown in Table 8, represent the following:

Class I Physically qualified for any position.

Class II Physically qualified for any position but has minor defects.

Class III Physically qualified for special em-

TABLE 7.
EDUCATIONAL ATTAINMENT LEVEL DISTRIBUTION

| Education | 500 Veterans* | | Army Data† |
|---|---|---|---|
| | Number | Per Cent | Per Cent |
| Grammar School (1 to 8 years) | 83 | 16.6 | 25.3 |
| High School (9 to 12 years) | 250 | 50.0 | 57.6 |
| College‡ (Freshman to A.B. or B.S.) | 145 | 29.0 | 14.5 |
| Post-Graduate (1 year to Ph.D.) | 22 | 4.4 | 2.6 |

* As of June 30, 1948.

† As of June 30, 1944; figures adjusted for sex and rank distribution by Army data for May 31, 1945, since the information was tabulated by sex and rank.

‡ Or at least two years of equivalent training in a profession.

TABLE 8.
HEALTH STATUS CLASSIFICATION DISTRIBUTION

| Classification | 500 Veterans Number | 500 Veterans Per Cent | Atomic Energy Workers Data—Per Cent |
|---|---|---|---|
| Group I | 192 | 38.4 | 32.8 |
| Group II | 258 | 51.6 | 56.5 |
| Group III | 50 | 10.0 | 10.7 |
| Significant Difference for 500 Veterans | | | No |

ployment only, with specific restrictions applied to each individual.

Class IV Physically unqualified for position applied for.

Although the veteran group contained 38.4% Class I personnel as compared with 32.8% for the plant, and 51.6% Class II personnel as compared with 56.5% for the plant, these differences were not significant. No Class IV personnel are covered by this study, since they represent individuals who have not been employed at the Laboratory.

In Table 9 covering disabilities, the health status Class III figures are shown separately, since they represent disabilities which are such as to limit the type of employment for which the individual is eligible, and are therefore of interest. Statistical comparisons have been performed for the totals only, which percentages represent the ratio of the number having each disability to the total number of veterans in the study, with or without any disability. It is noted that the totals have been limited to male veterans, since the comparable data for the Laboratory were for males only. In testing these two distributions for significance, there were no findings for any disability. All differences were very slight. The veteran was lower in per cent with dental, eye, hernia, malformation and neuropsychiatric disabilities; the veteran was higher

TABLE 9.
MAJOR DISABILITY DISTRIBUTION

| Disability | Study Veterans Health Class III No. | Study Veterans Health Class III Per Cent | Study Veterans Total No. | Study Veterans Total Per Cent | Per Cent of Males Study Veterans | Atomic Energy Worker Data—Males Per Cent |
|---|---|---|---|---|---|---|
| Allergy | 4 | 8.0 | 9 | 1.8 | 1.8 | 1.6 |
| Cardiovascular | 1 | 2.0 | 46 | 9.2 | 9.3 | 9.4 |
| Dental | 0 | 0 | 10 | 2.0 | 2.0 | 3.4 |
| Dermatologic | 2 | 4.0 | 26 | 5.2 | 5.3 | 5.3 |
| Ear, Nose, Throat | 3 | 6.0 | 34 | 6.8 | 6.9 | 5.8 |
| Endocrine | 0 | 0 | 40 | 8.0 | 7.5 | 5.5 |
| Eye | 7 | 14.0 | 18 | 3.6 | 3.6 | 4.3 |
| Gastro-Intestinal | 0 | 0 | 10 | 2.0 | 2.0 | 2.1 |
| Genito-Urinary | 0 | 0 | 17 | 3.4 | 3.4 | 3.8 |
| Hematologic | 1 | 2.0 | 2 | 0.4 | 0.4 | 0.4 |
| Hernia | 15 | 30.0 | 15 | 3.0 | 3.0 | 3.8 |
| Malformation | 0 | 0 | 2 | 0.4 | 0.4 | 1.1 |
| Neuropsychiatric | 7 | 14.0 | 21 | 4.2 | 4.2 | 6.2 |
| Orthopedic | 7 | 14.0 | 37 | 7.4 | 7.3 | 6.9 |
| Respiratory, non-tuberculous | 0 | 0 | 5 | 1.0 | 1.0 | 1.2 |
| Tropical Disease | 0 | 0 | 5 | 1.0 | 1.0 | 0.3 |
| Tuberculosis, history of | 3 | 6.0 | 6 | 1.2 | 1.2 | 1.0 |
| Venereal Disease | 0 | 0 | 5 | 1.0 | 0.8 | 1.1 |
| Total | 50 | 100.0 | 308 | 61.6 | 61.1 | 62.8 |
| Significant Difference for Study Veterans | | | | | | No |

TABLE 10.
NUMBER OF RESTRICTIONS PER INDIVIDUAL FOR 50 VETERANS

| Number of Restrictions | Number of Individuals | Per Cent of Health Status Class III |
|---|---|---|
| One | 39 | 78.0 |
| Two | 7 | 14.0 |
| Three | 1 | 2.0 |
| Four | 0 | 0 |
| Five | 3 | 6.0 |

in per cent with ear, nose and throat, endocrine, orthopedic, and tropical disease disabilities.

It might be mentioned that inspection of health status Class II, which makes up the balance of those having disabilities, revealed 14 or 5.4% of the 258 in this group under the neuropsychiatric disability category, by no means a high percentage in spite of the large number of neuropsychiatric cases among disability dischargees. It has been shown[19] that of those holding disability pensions for service-connected disabilities from World War II, 28% had neuropsychiatric disease as the major disability. From the same source,[20] one learns that approximately 12% of World War II veterans living June 30, 1947, were in receipt of compensation. Actually, the figures in Table 9 show a smaller percentage of neuropsychiatric disabilities for the veterans, 4.2%, than for the plant as a whole, (which includes veterans), but the method of classification differed for the two distributions, the plant disabilities being tabulated as 3.6% neurologic and 2.6% psychiatric disabilities.

Individuals with disabilities may fall in health status Class II or Class III, depending on the severity of the disability. If the individual is assigned to Class III, a restriction is placed on the type of work he can perform due to his particular disability. Without listing the specific restrictions, Table 10 is presented. It will be noted that over three-fourths of the health Class III veterans had only one type of restriction.

The significant differences between the Laboratory population and the veteran data regarding personal characteristics are summarized in Table 11. The differences demonstrated by the study group when examined with the plant population, with respect to sex and age, are understandable from the nature of military service. Regarding occupation, the significantly higher percentage in the protective group is a natural

TABLE 11.
SIGNIFICANT PERSONAL CHARACTERISTICS OF 500 VETERANS

| Characteristic | Significant Difference for 500 Veterans in Comparison to Atomic Energy Workers Data: Higher Number of | Lower Number of |
|---|---|---|
| Sex | Males | Females |
| Age | 20 to 29 year old individuals | 40 to 49 year old individuals<br>50 year old and up individuals |
| Present Occupation | Protective workers<br>Craft workers<br>Operative workers | Custodial workers |

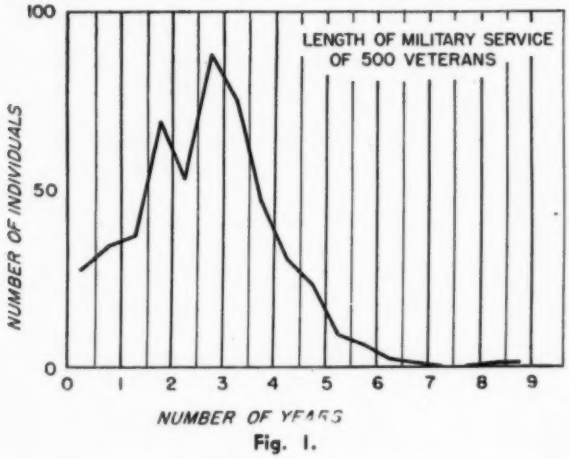



Fig. 1.

TABLE 12.
LENGTH OF MILITARY SERVICE DISTRIBUTION FOR 500 VETERANS

| Years | Number | Per Cent | Years | Number | Per Cent |
|---|---|---|---|---|---|
| —½* | 27 | 5.4 | 4½—5 | 23 | 4.6 |
| ½—1* | 34 | 6.8 | 5—5½ | 9 | 1.8 |
| 1—1½ | 37 | 7.4 | 5½—6 | 6 | 1.2 |
| 1½—2 | 68 | 13.6 | 6—6½ | 2 | 0.4 |
| 2—2½ | 53 | 10.6 | 6½—7 | 1 | 0.2 |
| 2½—3 | 87 | 17.4 | 7—7½ | 0 | 0 |
| 3—3½ | 75 | 15.0 | 7½—8 | 0 | 0 |
| 3½—4 | 46 | 9.2 | 8—8½ | 1 | 0.2 |
| 4—4½ | 30 | 6.0 | 8½—9 | 1 | 0.2 |

Average length of service—2 years, 8 1/3 months.

* In this and all tables where a time period is shown, this should be read as up to and including ½ year, while the following line would be read, over ½ year, up to and including 1 year.

outcome of service experience. The higher percentage of workers in the craft and operative fields, and the lower percentage in the custodial group represent the same type of relation which existed between prior occupation and the plant population.

Turning from the personal characteristics of the veteran to his service-connected characteristics, Fig. 1 and Table 12 show length of his military service. The average length of service was found to be 2 years, 8-1/3 months. Of interest is the small peak in the distribution curve occurring at the period of 1½ to 2 years. Statistical investigation confirmed that this peak represented two types of individuals, those who were too young to have seen longer military service, and those discharged before the end of the war.

With reference to branch of service distribution as shown in Table 13, the 74.3% ex-Army personnel found at the Laboratory was not significantly different from the 67.2% Army personnel shown for the year 1945 in the Statistical Abstract[21] data, nor were the differences for any other branch of military service significant.

Military grade status is presented in Table 14. Although the compared distribution is presented as Army data, the information for all other branches of the service was obtained from the Statistical Abstract,[21] and, when combined with the Army data[17] in the proper proportions for

TABLE 13.
BRANCH OF SERVICE DISTRIBUTION

| Branch of Service | 500 Veterans Number | 500 Veterans Per Cent | Statistical Abstract Data*—Per Cent |
|---|---|---|---|
| Army | 371 | 74.2 | 67.2 |
| Navy | 116 | 23.2 | 27.5 |
| Marine Corps | 10 | 2.0 | 3.9 |
| Coast Guard | 3 | 0.6 | 1.4 |
| Significant Difference for 500 Veterans | | | No |

* Based on figures for the year 1945

TABLE 14.
MILITARY GRADE STATUS DISTRIBUTION

| Military Grade Status | 500 Veterans Number | 500 Veterans Per Cent | Army Data* Per Cent |
|---|---|---|---|
| Enlisted | 439 | 87.8 | 89.2 |
| Officer | 61 | 12.2 | 10.8 |
| Significant Difference for 500 Veterans | | | No |

* As of May 31, 1945.

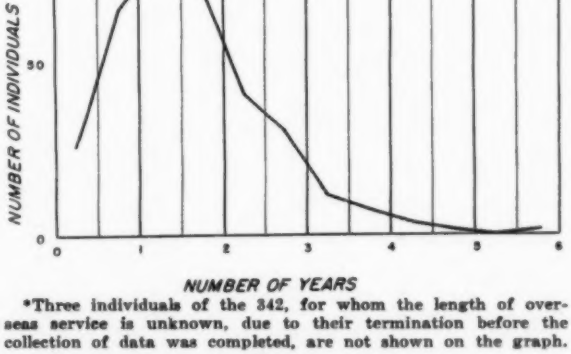
the various branches of the service, yielded the same percentages as the Army data. The percentage of officers in the study group, 12.2%, was not significantly different from that for the Army data, 10.8%.

Of the 500 veterans in this survey, 158 served in the American Theatre of Operations only. It was found that, of the 342, or 68.4%, with over-

TABLE 15.
LENGTH OF OVERSEAS SERVICE DISTRIBUTION FOR 342 VETERANS

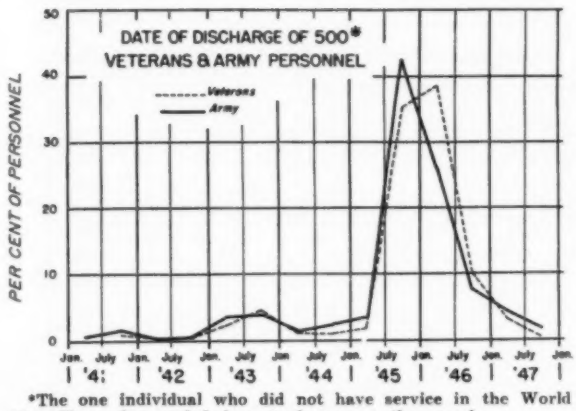
| Years | Number | Per Cent |
|---|---|---|
| —½ | 26 | 7.6 |
| ½—1 | 66 | 19.3 |
| 1—1½ | 82 | 24.0 |
| 1½—2 | 70 | 20.5 |
| 2—2½ | 41 | 12.0 |
| 2½—3 | 30 | 8.8 |
| 3—3½ | 11 | 3.2 |
| 3½—4 | 7 | 2.0 |
| 4—4½ | 3 | 0.9 |
| 4½—5 | 2 | 0.6 |
| 5—5½ | 0 | 0 |
| 5½—6 | 1 | 0.3 |
| Unknown Length of Time | 3 | 0.9 |

Average Length of Overseas Service—1 year, 7 4/5 months.




*Three individuals of the 342, for whom the length of overseas service is unknown, due to their termination before the collection of data was completed, are not shown on the graph.

Fig. 2.




*The one individual who did not have service in the World War II service period is not shown on the graph.

Fig. 3.

TABLE 16.
DATE OF DISCHARGE DISTRIBUTION

| Date | 500 Veterans Number | 500 Veterans Per Cent | Strength of the Army Data*—Per Cent |
|---|---|---|---|
| Jan.—June '34 | 1 | 0.2 | — |
| Jan.—June '41 | 0 | 0 | 0.5 |
| July—Dec. '41 | 4 | 0.8 | 1.4 |
| Jan.—June '42 | 1 | 0.2 | 0.3 |
| July—Dec. '42 | 1 | 0.2 | 0.5 |
| Jan.—June '43 | 11 | 2.2 | 3.8 |
| July—Dec. '43 | 23 | 4.6 | 3.8 |
| Jan.—June '44 | 6 | 1.2 | 1.5 |
| July—Dec. '44 | 5 | 1.0 | 2.5 |
| Jan.—June '45 | 9 | 1.8 | 3.3 |
| July—Dec. '45 | 177 | 35.4 | 42.3 |
| Jan.—June '46 | 193 | *38.6* | *26.2* |
| July—Dec. '46 | 51 | 10.2 | 7.4 |
| Jan.—June '47 | 16 | 3.2 | 4.3 |
| July—Dec. '47 | 2 | 0.4 | 2.1 |
| Significant Difference for 500 Veterans | | | Yes |

* Computed for males only. Data were for January, 1941, through December, 1947.

NOTE: Where two enlistments were served by the same individual, the date of the more recent discharge was used.

seas service, 312 served in one overseas theatre, while the remainder were assigned to more than one. Fig. 2 and Table 15 show the length of service overseas for the individuals so assigned. The average length of time spent overseas was 1 year, 7-4/5 months.

Fig. 3 and Table 16 concern the date of discharge. The survey findings were compared with Strength of the Army[22] data, and the only significant difference exhibited was for those discharged January to June, 1946, the plant veteran percentage being significantly higher than that for male Army personnel. The explanation for this finding was sought in the rate of hiring at the Oak Ridge National Laboratory, but nothing conclusive could be established. The small peak found in the sample distribution for 1943 is comparable with the peak found in the Army data, representing the execution of a discharge policy current at the time relating to limited service personnel. The comparison of these two distributions might be questioned on the basis that the survey data include females and non-Army personnel, whereas the Army data

TABLE 17.
TYPE OF DISCHARGE DISTRIBUTION

| Type of Discharge | 500 Veterans Number | 500 Veterans Per Cent | Strength of the Army Data*—Per Cent |
|---|---|---|---|
| Disability | 59 | 11.8 | 14.3 |
| Non-Disability | 441 | 88.2 | 85.7 |
| Significant Difference for 500 Veterans | | | No |

* Figures used covered the period from July 1, 1940, to June 30, 1948; data were computed for males only. The group called "disability" above was defined in Strength of the Army as "physical disqualification" for officers and as "physical and mental disqualification" for enlisted men. The total group on the basis of which the percentages were determined was defined as "total separations other than casualties and commissions."

do not. The Army data are felt to be typical regardless of these limitations, however. It is observed that nearly three-fourths of the study group were discharged during the year from July, 1945, through June, 1946.

In an examination of the 500 veterans with regard to type of discharge, 11.8% were found to have received disability discharges, as shown in Table 17, somewhat less than the 14.3% found in the Army data. This difference was not significant statistically. Again the Army data are assumed to be adequate for comparison despite their limitations. It must be noted that the Army data include individuals with total disability, none of whom would be represented in this survey.

Two measures of the veteran's adjustment to his present life as seen on the job have been adopted: (1) Supervisors' ratings of job adjustment; and (2) Cornell Index group score for emotional adjustment.

The supervisor's rating score was determined by having the supervisor grade the employee's concrete behavior on the job on an objective rating scale as follows:

| | |
|---|---|
| Superior | 100 |
| Above Average | 80 |
| Average | 60 |
| Below Average | 40 |
| Unsatisfactory | 20 |

on each of the following factors:

| | |
|---|---|
| Quality of Work | Dependability |
| Quantity of Work | Attitude |
| Job Knowledge | Attendance |
| Adaptability | Punctuality |
| Judgment | Ability |

The ratings on each of these 10 factors were combined to form the supervisor's rating average for all qualities per individual, these scores being hereafter referred to as the supervisors' ratings. Fig. 4 and Table 18 present the compilation of the individual over-all scores. The supervisors' ratings ranged from 42 for one person to 100, or superior on all qualities, for two individuals, with a mean for all scores of 72.20.

Table 19 shows the supervisors' rating scores grouped in the manner used in the balance of the tables.

The Cornell Index, a personality appraisal, consists of a questionnaire filled out by the in-

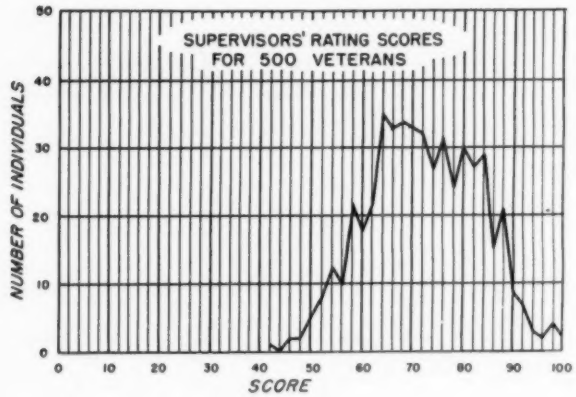


Fig. 4.

TABLE 18.
SUPERVISORS' RATING SCORES FOR 500 VETERANS

| Score | Number | Per Cent | Score | Number | Per Cent |
|---|---|---|---|---|---|
| 42 | 1 | 0.2 | 72 | 32 | 6.4 |
| 44 | 0 | 0 | 74 | 27 | 5.4 |
| 46 | 2 | 0.4 | 76 | 31 | 6.2 |
| 48 | 2 | 0.4 | 78 | 24 | 4.8 |
| 50 | 5 | 1.0 | 80 | 30 | 6.0 |
| 52 | 8 | 1.6 | 82 | 27 | 5.4 |
| 54 | 12 | 2.4 | 84 | 29 | 5.8 |
| 56 | 10 | 2.0 | 86 | 15 | 3.0 |
| 58 | 22 | 4.4 | 88 | 21 | 4.2 |
| 60 | 18 | 3.6 | 90 | 9 | 1.8 |
| 62 | 22 | 4.4 | 92 | 7 | 1.4 |
| 64 | 35 | 7.0 | 94 | 3 | 0.6 |
| 66 | 33 | 6.6 | 96 | 2 | 0.4 |
| 68 | 34 | 6.8 | 98 | 4 | 0.8 |
| 70 | 33 | 6.6 | 100 | 2 | 0.4 |

Mean Supervisors' Rating (all factors)—72.20.

dividual, dealing with his medical history and situational responses. Among the 200 questions are certain questions called stop questions and significant questions. From those questions to which an answer indicative of some maladjustment has been given, an individual's score is determined, and the larger the score, the greater the neurotic tendency. Zero, then, is the perfect score with no significant findings. The test is planned so that the groupings of "normal," "mildly" psychoneurotic and "severely" psychoneurotic correspond respectively to scores 0 to 12, 13 to 22, and 23 and above. While useful in screening out mild or severe maladjustments, this grouping does not take into account the individual who, although having answered only three or four of the stop questions in a significant manner, may have shown, by the nature of the questions so answered, a maladjustment that may lead to a condition that should be classified as mildly or severely psychoneurotic. Table 20 presents the

TABLE 19.
GROUPED SCORES ON SUPERVISORS' RATINGS FOR 500 VETERANS

| Scores | Number | Per Cent |
|---|---|---|
| 42—50 | 10 | 2.0 |
| 52—60 | 70 | 14.0 |
| 62—70 | 157 | 31.4 |
| 72—80 | 144 | 28.8 |
| 82—90 | 101 | 20.2 |
| 92—100 | 18 | 3.6 |

TABLE 20.
CORNELL INDEX SCORES FOR 500 VETERANS

| Score | Number | Per Cent | Score | Number | Per Cent |
|---|---|---|---|---|---|
| 0 | 194 | 38.8 | 13 | 4 | 0.8 |
| 1 | 87 | 17.4 | 14 | 5 | 1.0 |
| 2 | 42 | 8.4 | 15 | 2 | 0.4 |
| 3 | 37 | 7.4 | 16 | 1 | 0.2 |
| 4 | 33 | 6.6 | 20 | 2 | 0.4 |
| 5 | 18 | 3.6 | 21 | 1 | 0.2 |
| 6 | 13 | 2.6 | 22 | 1 | 0.2 |
| 7 | 16 | 3.2 | 23 | 2 | 0.4 |
| 8 | 11 | 2.2 | 27 | 1 | 0.2 |
| 9 | 4 | 0.8 | 28 | 1 | 0.2 |
| 10 | 8 | 1.6 | 29 | 1 | 0.2 |
| 11 | 5 | 1.0 | 32 | 1 | 0.2 |
| 12 | 9 | 1.8 | 45 | 1 | 0.2 |

ungrouped Cornell Index scores, ranging from 0 to 45. Nearly two-fifths of the group had a perfect score or zero.

The formal groupings for the Cornell Index scores are given in Table 21, from which it is observed that 95.4% of the veterans scored in the "normal" classification, while 23 individuals had scores of 13 or over, yielding 3.2% for the portion of the entire group falling in the "mildly" psychoneurotic class and 1.4% falling in the "severely" psychoneurotic category.

In addition to these concrete measures of adjustment, various remarks made by the veterans when interviewed are of interest, although they are not too satisfactory for statistical treatment. Of the 500 veterans covered by this survey, 237, or 47.4%, had no complaints. The remainder, 263, or 52.6%, had at least one item, concerning their problems either in adjustment or in relation to a service-connected situation, to discuss with the interviewer, and many of these problems were taken up later with the Rehabilitation Service. Probably as an outcome of the fact that this service is maintained in conjunction with the Health Division, the most frequent requests were for specific medical advice. Very close to this in importance in the veterans' minds was the subject of further education, not only college training, but even the obtaining of a high school completion certificate. About 20 individuals were interested in advice on pensions: how to apply for them, why pensions had been discontinued, and whether their disabilities were such that they should be granted pensions. Other comments were related directly to their work, covering such subjects as job transfers, improved wage and labor conditions, shift work, and seniority. There were questions about the meaning and effect of job restrictions, questions regarding Veterans' Administration hospitalization and inquiries about National Service Life Insurance. On the whole, the discussion with the veterans showed a desire on

TABLE 21.
GROUPED CORNELL INDEX SCORES FOR 500 VETERANS

| Group | Number | Per Cent |
|---|---|---|
| "Normal" (Scores 0 to 12) | 477 | 95.4 |
| "Mildly" Psychoneurotic (Scores 13 to 22) | 16 | 3.2 |
| "Severely" Psychoneurotic (Scores 23 and up) | 7 | 1.4 |

TABLE 22.
LENGTH OF MILITARY SERVICE AND SUPERVISORS' RATINGS FOR 500 VETERANS

| Years of Service | Supervisors' Rating Scores 42—50 | 52—60 | 62—70 | 72—80 | 82—90 | 92—100 | Total | Mean | Standard Deviation | Significant Difference |
|---|---|---|---|---|---|---|---|---|---|---|
| —1 | 1 | 12 | 20 | 19 | 9 | 0 | 61 | 69.93 | 10.29 | No |
| 1—2 | 2 | 11 | 35 | 25 | 25 | 7 | 105 | 74.21 | 11.47 | No |
| 2—3 | 1 | 20 | 41 | 40 | 35 | 3 | 140 | 72.47 | 10.56 | No |
| 3—4 | 1 | 18 | 39 | 34 | 26 | 3 | 121 | 72.12* | 10.32 | No |
| 4—5 | 2 | 6 | 14 | 22 | 5 | 4 | 53 | 72.42* | 11.57 | No |
| 5—6 | 1 | 2 | 6 | 4 | 1 | 1 | 15 | 69.33 | 11.14 | No |
| 6—7 | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 65.33 | 5.25 | No |
| 7—8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | — | — |
| 8—9 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | *49.00* | 1.00 | Yes |
| Total | 10 | 70 | 157 | 144 | 101 | 18 | 500 | 72.20 | 10.94 | |

* Broken down into six month periods these give:
3 to 3½ years mean 72.90
3½ to 4 years mean 70.70
4 to 4½ years mean 71.80
4½ to 5 years mean 73.22
Other yearly means are typical of both six months covered.

their part for further information related to their particular problems, rather than any tendency to complain about conditions without any motivation to improve them.

In examining the relationship between the supervisors' ratings and the Cornell Index score groups, it was found that the average rating given by supervisors was 72.29 for the "normal" group, 70.25 for the "mildly" psychoneurotic group, and 70.86 for the "severely" psychoneurotic group. Since no significant differences were found, these two factors are deemed independent.

THE characteristics of the 500 veterans relating to military service will now be studied in relation to the adjustment measures. Length of military service and the supervisors' ratings are dealt with in Table 22, which presents a significant difference for the two individuals with eight to nine years' length of military service. The mean for two to three years, the group in which the average length of service, 2 years, 8-1/3 months, fell was 72.47, as compared with 72.20 for the over-all group. The highest average,

TABLE 23.
LENGTH OF MILITARY SERVICE AND CORNELL INDEX SCORE GROUPS FOR 500 VETERANS

| Years of Service | Cornell Index Score Groups — Number "Normal" | "Mildly" Psychoneurotic | "Severely" Psychoneurotic | Total | Per Cent "Normal" | "Mildly" Psychoneurotic | "Severely" Psychoneurotic | Significant Difference |
|---|---|---|---|---|---|---|---|---|
| —1 | 57 | 3 | 1 | 61 | 93.4 | 4.9 | 1.6 | No |
| 1—2 | 102 | 3 | 0 | 105 | 97.1 | 2.9 | 0 | No |
| 2—3 | 134 | 3 | 3 | 140 | 95.7 | 2.1 | 2.1 | No |
| 3—4 | 116 | 3 | 2 | 121 | 95.9 | 2.5 | 1.7 | No |
| 4—5 | 51 | 2 | 0 | 53 | 96.2 | 3.8 | 0 | No |
| 5—6 | 12 | 2 | 1 | 15 | *80.0* | 13.3 | 6.7 | Yes |
| 6—7 | 3 | 0 | 0 | 3 | 100.0 | 0 | 0 | No |
| 7—8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | — |
| 8—9 | 2 | 0 | 0 | 2 | 100.0 | 0 | 0 | No |
| Total | 477 | 16 | 7 | 500 | 95.4 | 3.2 | 1.4 | |

TABLE 24.
LENGTH OF OVERSEAS SERVICE AND SUPERVISORS' RATINGS FOR 500 VETERANS

| Length of Overseas Service in Years | Supervisors' Rating Scores 42—50 | 52—60 | 62—70 | 72—80 | 82—90 | 92—100 | Total | Mean | Standard Deviation | Significant Difference |
|---|---|---|---|---|---|---|---|---|---|---|
| —1 | 0 | 18 | 24 | 22 | 26 | 2 | 92 | 73.24 | 11.10 | No |
| 1—2 | 4 | 21 | 56 | 35 | 28 | 8 | 152 | 71.37 | 11.38 | No |
| 2—3 | 1 | 12 | 28 | 25 | 4 | 1 | 71 | 69.04* | 9.66 | No |
| 3—4 | 2 | 2 | 4 | 7 | 2 | 1 | 18 | 70.00* | 11.87 | No |
| 4—5 | 1 | 1 | 2 | 1 | 0 | 0 | 5 | 64.40 | 9.67 | No |
| 5—6 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 70.00 | 0 | No |
| Unknown | 0 | 0 | 0 | 2 | 1 | 0 | 3 | 78.00 | 7.12 | Not Tested |
| Total Overseas | 8 | 54 | 115 | 92 | 61 | 12 | 342 | *71.27* | 13.01 | Yes |
| Not Overseas | 2 | 16 | 42 | 52 | 40 | 6 | 158 | *74.23* | 9.87 | Yes |
| Total | 10 | 70 | 157 | 144 | 101 | 18 | 500 | 72.20 | 10.94 | |

* Broken down into six month periods these give:
2 to 2½ years mean 70.00
2½ to 3 years mean 67.73
3 to 3½ years mean 70.73
3½ to 4 years mean 68.86
Other yearly means are typical of both six month periods covered.

74.21, was made by those with one to two years of military service.

In examining length of military service and Cornell Index score groups, the low percentage, 80.0%, for the "normal" group in the five to six years' service period demonstrated a significant difference. The highest percentage of "normal" individuals for any sizeable group (97.1%) occurred for the one to two years' length of service personnel. The class with two to three years of service, where the average length of service fell, had 95.7% in the "normal" group, as shown in Table 23.

In treating branch of service and supervisors' ratings, a mean of 72.06 was found for the former personnel of the Army, 72.71 for the Navy, 74.00 for the Marine Corps, and 64.67 for the Coast Guard (group of three only). None of these differences was significant.

There were no significant differences in the relation between branch of service and Cornell Index score groups. Of the 10 Marines in the survey, eight were in the "normal" group, one in the "mildly" psychoneurotic group, and one in the "severely" psychoneurotic group, rather a departure from the percentages for the entire group, 95.4% "normal," 3.2% "mildly" psychoneurotic, and 1.4% "severely" psychoneurotic.

Military grade status contrasted with supervisors' ratings demonstrated a significant difference between enlisted men with a mean of 71.55 and officers with a mean of 76.92, but when the obvious correlation between military rank and educational attainment level was taken into account, all differences failed to reach the level of significance.

When military grade status was tested against the Cornell Index score groups, no significant difference was found, although 100% of the of-

TABLE 25.
LENGTH OF OVERSEAS SERVICE AND CORNELL INDEX SCORE GROUPS FOR 500 VETERANS

| Length of Overseas Service in Years | Cornell Index Score Groups: Number "Normal" | "Mildly" Psychoneurotic | "Severely" Psychoneurotic | Total | Per Cent "Normal" | "Mildly" Psychoneurotic | "Severely" Psychoneurotic | Significant Difference |
|---|---|---|---|---|---|---|---|---|
| —1 | 92 | 0 | 0 | 92 | *100.0* | 0 | 0 | Yes |
| 1—2 | 141 | 8* | 3* | 152 | 92.8 | 5.3 | 2.0 | No |
| 2—3 | 67 | 2* | 2* | 71 | 94.4 | 2.8 | 2.8 | No |
| 3—4 | 18 | 0 | 0 | 18 | 100.0 | 0 | 0 | No |
| 4—5 | 4 | 1 | 0 | 5 | 80.0 | 20.0 | 0 | No |
| 5—6 | 1 | 0 | 0 | 1 | 100.0 | 0 | 0 | No |
| Unknown | 2 | 0 | 1 | 3 | 66.7 | 0 | 33.3 | Not |
| Total Overseas | 325 | 11 | 6 | 342 | 95.0 | 3.2 | 1.8 | Tested No |
| Not Overseas | 152 | 5 | 1 | 158 | 96.2 | 3.2 | 0.6 | No |
| Total | 477 | 16 | 7 | 500 | 95.4 | 3.2 | 1.4 | |

* Broken down in six-month periods these are: 1 to 1½ years—1 "mildly" and 1 "severely" psychoneurotic; 1½ to 2 years—7 "mildly" and 2 "severely" psychoneurotic; 2 to 2½ years—1 "mildly" and 2 "severely" psychoneurotic; and 2½ to 3 years—1 "mildly" and none "severely" psychoneurotic.

ficers fell to the "normal" Cornell Index bracket, while 94.8% of the enlisted men were in the "normal" category.

Table 24, in addition to giving length of overseas service with supervisors' ratings, also compares those with overseas service with those lacking such service as to their supervisors' ratings. The average, 71.27, for those with overseas service was significantly different from the average of 74.23 for those with no service overseas. The average for no yearly total of overseas service was as high as that for individuals without this service. The highest average for a known period of overseas service was 73.24 for up to one year's service. The average for the group in which the mean period of overseas service (1 year, 7-4/5 months) fell was 71.37.

TABLE 26.
DATE OF DISCHARGE AND SUPERVISORS' RATINGS FOR 500 VETERANS

| Date of Discharge | Supervisors' Rating Scores: 42—50 | 52—60 | 62—70 | 72—80 | 82—90 | 92—100 | Total | Mean | Standard Deviation | Significant Difference |
|---|---|---|---|---|---|---|---|---|---|---|
| Jan.—June '34 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 80.00 | 0 | No |
| July—Dec. '41 | 0 | 2 | 0 | 2 | 0 | 0 | 4 | 68.00 | 12.33 | No |
| Jan.—June '42 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 56.00 | 0 | No |
| July—Dec. '42 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 72.00 | 0 | No |
| Jan.—June '43 | 0 | 4 | 6 | 1 | 0 | 0 | 11 | *63.64* | 7.33 | Yes |
| July—Dec. '43 | 0 | 3 | 9 | 5 | 5 | 1 | 23 | 73.39 | 10.42 | No |
| Jan.—June '44 | 0 | 0 | 1 | 4 | 1 | 0 | 6 | 76.00 | 4.47 | No |
| July—Dec. '44 | 0 | 0 | 1 | 2 | 1 | 1 | 5 | 79.60 | 10.98 | No |
| Jan.—June '45 | 0 | 1 | 3 | 3 | 2 | 0 | 9 | 70.67 | 9.09 | No |
| July—Dec. '45 | 8 | 24 | 66 | 47 | 26 | 6 | 177 | *70.24* | 11.00 | Yes |
| Jan.—June '46 | 0 | 26 | 50 | 59 | 49 | 9 | 193 | *74.22* | 10.75 | Yes |
| July—Dec. '46 | 2 | 5 | 12 | 18 | 13 | 1 | 51 | 73.37 | 10.80 | No |
| Jan.—June '47 | 0 | 4 | 7 | 1 | 4 | 0 | 16 | 69.75 | 10.17 | No |
| July—Dec. '47 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 65.00 | 1.00 | No |
| Total | 10 | 70 | 157 | 144 | 101 | 18 | 500 | 72.20 | 10.94 | |
| Before July, '45 | 8 | 35 | 86 | 66 | 35 | 8 | 61 | 71.44 | 10.52 | No |
| July, '45, and after | 2 | 35 | 71 | 78 | 66 | 10 | 439 | 72.31 | 10.99 | No |

In regard to length of overseas service and the Cornell Index score groups as shown in Table 25, there was no significant difference between those with overseas service (95.0% "normal") and those without service overseas (96.2% "normal"). The only significant difference was demonstrated by the 100% "normal" for those with up to one year's overseas service. The sizeable group with the lowest percentage in the "normal" group was those with one to two years' overseas service, 92.8%, this being the group in which the average length of overseas duty occurred. This group also had the highest percentage for any sizeable group in the "mildly" psychoneurotic class with 5.3%, whereas the two to three years of overseas service group had a somewhat higher percentage in the "severely" psychoneurotic group with 2.8%.

Consistent with the findings demonstrated in relation to the adjustment measures and length of overseas service is Cameron's[1] observation that there is a tendency, particularly noticeable in troops who have been overseas for a long period of time, to become not only indifferent toward the home community but even hostile. This attitude would naturally have some bearing on the adjustment shown by these men upon returning home.

Treated in Table 26 are the data on date of discharge and supervisors' ratings. A significantly high mean was found for those discharged January to June, 1946, and a significantly low mean for those discharged January to June, 1943, and July to December, 1945. It will be recalled that there was a small peak in the Army rate of discharge for the year 1943. The Laboratory supervisors found the personnel discharged in the first half of that year to be significantly less satisfactory. It will be recalled also that there were more January to June, 1946, dischargees and fewer July to December, 1945, dischargees among the veterans at this plant as compared with Army discharge rates. The fact that the January to June, 1946, dischargees were rated significantly higher by their supervisors than the balance of the group, which is largely July to December, 1945, dischargees, ties in with the fact that there were relatively fewer July to December, 1945, dischargees employed at the Laboratory. In this table findings have been grouped by those discharged before July, 1945, and those discharged then and afterward, the best estimate of the time of cessation of hostilities in terms of the time period breakdown used, but there were no significant findings in this regard.

Two possibilities come to mind as to why the dischargees in the first half of 1946 should be superior in adjustment to those discharged the latter half of 1945. At that time, discharges were granted on the basis of the "point system." Points were awarded for such factors as length of military service, overseas service, combat, and other measures associated with active service.

TABLE 27.
DATE OF DISCHARGE AND CORNELL INDEX SCORE GROUPS FOR 500 VETERANS

| Date of Discharge | Cornell Index Score Groups — Number | | | | Per Cent | | | Significant Difference |
|---|---|---|---|---|---|---|---|---|
| | "Normal" | "Mildly" Psychoneurotic | "Severely" Psychoneurotic | Total | "Normal" | "Mildly" Psychoneurotic | "Severely" Psychoneurotic | |
| Jan.—June '34 | 1 | 0 | 0 | 1 | 100.0 | 0 | 0 | No |
| July—Dec. '41 | 4 | 0 | 0 | 4 | 100.0 | 0 | 0 | No |
| Jan.—June '42 | 1 | 0 | 0 | 1 | 100.0 | 0 | 0 | No |
| July—Dec. '42 | 1 | 0 | 0 | 1 | 100.0 | 0 | 0 | No |
| Jan.—June '43 | 11 | 0 | 0 | 11 | 100.0 | 0 | 0 | No |
| July—Dec. '43 | 20 | 3 | 0 | 23 | 87.0 | *13.0* | 0 | Yes |
| Jan.—June '44 | 4 | 1 | 1 | 6 | *66.7* | 16.7 | 16.7 | Yes |
| July—Dec. '44 | 5 | 0 | 0 | 5 | 100.0 | 0 | 0 | No |
| Jan.—June '45 | 7 | 1 | 1 | 9 | 77.8 | 11.1 | 11.1 | No |
| July—Dec. '45 | 167 | 6 | 4 | 177 | 94.4 | 3.4 | 2.3 | No |
| Jan.—June '46 | 188 | 4 | 1 | 193 | 97.4 | 2.1 | 0.5 | No |
| July—Dec. '46 | 50 | 1 | 0 | 51 | 98.0 | 2.0 | 0 | No |
| Jan.—June '47 | 16 | 0 | 0 | 16 | 100.0 | 0 | 0 | No |
| July—Dec. '47 | 2 | 0 | 0 | 2 | 100.0 | 0 | 0 | No |
| Total | 477 | 16 | 7 | 500 | 95.4 | 3.2 | 1.4 | |
| Before July '45 | 54 | 5 | 2 | 61 | *88.5* | 8.2 | 3.3 | Yes |
| July '45 and after | 423 | 11 | 5 | 439 | *96.4* | 2.5 | 1.1 | Yes |

Those individuals with the greatest number of points commensurate with a currently established figure were discharged first after the close of hostilities. The existence of the conditions which led to a high number of points, from the indications of this study, also led to more difficulty in adjustment. The other thought in this connection is that for the July to December, 1945, dischargees the war ended suddenly, and they were discharged quickly, whereas the January to June, 1946, dischargees had more time to spend in an essentially peace-time Army, and had a greater period of time, perhaps, to plan for their post-war living.

The relation between date of discharge and Cornell Index score groups, given in Table 27, demonstrated significantly more "mildly" psychoneurotic individuals among the July to December, 1943, dischargees, and significantly fewer "normal" individuals among the January to June, 1944, dischargees. No other findings were significant for the separate time periods, but there was a significant difference between the number in the "normal" class discharged before the end of the war (88.5%), and the number of "normal" individuals discharged after the end of the war (96.4%).

In regard to the examination of supervisors' ratings and types of discharge, there were no significant findings. The mean for the disability dischargees was 71.63, and for the non-disability dischargees, 72.28. In the type of discharge and Cornell Index score group comparison, the percentages were not significantly different, being 91.5% in the "normal" group, 6.8% in the "mildly" psychoneurotic class and 1.7% in the "severely" psychoneurotic group for the disability dischargees, and 95.9% in the "normal" class, 2.7% in the "mildly" psychoneurotic group and 1.4% in the "severely" psychoneurotic group for the non-disability dischargees.

TABLE 28.
SUMMARY OF SIGNIFICANT RELATIONS BETWEEN SERVICE-CONNECTED CHARACTERISTICS AND ADJUSTMENT FACTORS FOR 500 VETERANS

| Characteristic | Adjustment Measure | Significantly High for | Significantly Low for |
|---|---|---|---|
| Length of Military Service | Supervisors' Ratings | None | 8 to 9 years' service |
| | Cornell Index | None | "Normal" for 5 to 6 years' service |
| Branch of Service | Supervisors' Ratings | None | None |
| | Cornell Index | None | None |
| Military Grade Status Adjusted for Educational Attainment Level | Supervisors' Ratings | None | None |
| | Cornell Index | None | None |
| Length of Overseas Service | Supervisors' Ratings | Total not overseas | Total overseas |
| | Cornell Index | "Normal" for up to 1 year's overseas service | None |
| Date of Discharge | Supervisors' Ratings | January to June 1946 dischargees | January to June 1943 dischargees<br>July to December 1945 dischargees |
| | Cornell Index | "Mildly" psychoneurotic for July to December 1943 dischargees<br>"Normal" for July 1945 and after dischargees | "Normal" for January to June 1944 dischargees<br>"Normal" for dischargees before July 1045 |
| Type of Discharge | Supervisors' Ratings | None | None |
| | Cornell Index | None | None |

The findings for the relations between service-connected characteristics and the adjustment factors, (Tables 22 through 27), are summarized in Table 28.

It is seen that, as measured by the supervisors' ratings for job performance, the individuals not overseas were rated higher and the total with overseas service rated lower. The January to June, 1946, dischargees were rated higher, and the January to June, 1943, and July to December, 1945, dischargees were rated lower, each in comparison to the balance of the entire group. Those with eight to nine years' military service also were rated lower than all others. All these differences were significant.

In relation to the Cornell Index score groups, the measure of personality adjustment, there was a significantly high number of "normal" individuals in the group with overseas service up to one year, (as compared with the balance of those with overseas service), of "normal" individuals among those discharged July, 1945, and after, and of "mildly" psychoneurotic individuals among the July to December, 1943, dischargees. There was a significantly low number of "normal" persons in the group with five to six years of military service, in the "normal" class among the January to June, 1944, dischargees, and of "normal" individuals among all dischargees before July, 1945, each factor being compared to the rest of the entire group.

## Summary

THE establishment of the Oak Ridge National Laboratory was reviewed and its development traced with emphasis on the contribution of the Special Engineer Detachment of the Army.

2. The programs of the Laboratory concerning the veteran-employee were discussed.

3. The literature relating to the psychological constitution of the soldier and veteran, the problem of the disabled veteran and his rehabilitation, the action taken toward veterans on the part of industry and the adjustment demonstrated by the veteran in industry, was reviewed.

4. A group of 500 veterans employed at the Oak Ridge National Laboratory was studied in regard to personal characteristics, service-connected characteristics, and job adjustment.

5. The following personal identifying characteristics were possessed by the major portion of the 500 veterans: male (99.0%), white (96.4%), aged 20 to 29 years (65.4%), married (77.2%), possessing a minimum of some high school education (74.7%), and demonstrating freedom from physical disability or showing disability not requiring job limitation (90.0%). Occupation and job-limiting disabilities also were studied.

6. As to military service characteristics, the study group spent an average of 2 years, 8-1/3 months in military service, with 56.6% being in the service between 1½ and 3½ years; the Army was the branch of service for 74.2% of the veterans, and 87.8% served as enlisted men; for the 68.4% who saw overseas duty, the average length of service overseas was 1 year, 7-4/5 months, with 75.8% of them being overseas between ½ and 2½ years; of the 500 veterans, 74.0% were discharged from the service between July, 1945, and June, 1946; 11.8% of the discharges were for disability.

7. The adjustment demonstrated by the veteran on the job was measured by the supervisors' ratings, (where the mean was 72.20 on a rating scale with 60 as "average" and 80 as "above average"), and by the Cornell Index score, (95.4% of the veterans were in the "normal" group, 3.2% in the "mildly" psychoneurotic group and 1.4% in the "severely" psychoneurotic group).

8. The Oak Ridge National Laboratory veterans were not significantly different from the other personnel of the Laboratory in so far as the distributions for race, marital status, health status classification, disability and education. They did differ significantly in the categories of sex, age, and occupation. In connection with occupation, the most important finding consisted of a shift to protective work.

9. In comparison with typical veteran data, the study group was not significantly different from all veterans with regard to sex, race, branch of military service, military grade status, type of discharge and age distributions. They did differ significantly from veterans as a whole regarding date of discharge, having significantly more discharged in the period from January, 1946, through June, 1946. Educational attainment level was not tested, but there is a possibility that there is a difference in this connection between the 500 veterans and veterans in the overall picture.

10. Service-connected characteristics of the study veterans were examined for their relation to the measures of adjustment. Military grade status, when adjusted for education, type of discharge, whether disability or nondisability, and branch of military service had no significant effect on the adjustment factors. Length of military service, length of overseas service, and date of discharge demonstrated significant relationships with the adjustment factors. Significantly better adjustment was found for the individual: (a) who was not overseas, (b) who, if he were overseas, had up to and not exceeding one year of overseas service, (c) who was discharged January to June, 1946, (d) who was discharged July 1945 or after. Significantly poorer adjustment was found for those: (a) who had five to six years and eight to nine years of military service, (b) who had overseas service, (c) who were discharged January, 1943, to June, 1944, and July to December, 1945, (d) who were discharged before July, 1945.

11. In relation to the above findings, the precise contribution of sex, age and occupation to the veterans' adjustment have not been determined, but this should not influence the applicability of the findings, since these characteristics are distributed approximately the same for all veteran populations. A possible difference in educational achievement level at the Laboratory and the excess of proportionate representation of the January to June, 1946, dischargees at this plant are asserted to be the only factors which might tend to exert a limiting influence on the findings.


## Conclusions

THE VETERAN of World War II on his return to industry has made an excellent job adjustment. In spite of the emotional traumas of military experiences, the ex-serviceman has resumed his civilian role with relative ease, demonstrating his ability to be a contributing member of the industrial society.

2. This complete integration into the production scene bespeaks the unnecessary alarm raised by "interested" civilians at war's end, who superconsciously endeavored to receive the veteran and rehabilitate him to the non-military way of life. Much of the effort to help the veterans has been beneficial, however, and a healthful interest in assisting the veteran's readjustment is to be encouraged.

3. The experience of formalized living in the armed services has benefited, rather than harmed, many of the men exposed to the altered methodologies of service life.

4. The effective job adjustment realized by the former member of the military points up the necessity for a specialized understanding of the

demands of service life as contrasted with those of the civilian existence. Whereas difficulties of integration were encountered by some in the regimented frustrating mass scheme of uniformed living, they did not carry over to the relatively stress-free civilian setting.

5. American youth has shown its resilience and pliability in being able to withstand environmental and psychic shock, by facing on its return a changed social scene with equanimity, intelligence and ease of adaptability.

6. The re-entry of the veteran to industry has been a smooth process, unaccompanied by many of the anticipated difficulties of human reconversion. Disturbing factors in the ease of total job adjustment were excessive length of military service, prolonged overseas duty, and discharge at the midpoint of the war. These considerations should enter into future mobilization planning, which should extrapolate its blueprints beyond the M-day philosophy of preparing solely for the immediate moment of emergency.

7. The dexterous entry of the veteran, physically fit and disabled alike, into civilian functioning should dispel the horrendous cries of the physical fitness alarmists who have made high Selective Service rejection figures their chauvinistic battle-cry. Physical, mental and emotional fitness for employment and self-sufficiency should replace for all time the false yardstick of national well-being established by mass physical findings.

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(P. O. Box P.)

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## Somebody Cares

AND then one day a woman worker turned up in the dispensary complaining of back pain. I went to her work station and found that she was one of a group who were winding tape insulation onto quite sizeable coils. And I also noted that, though she was inches taller than any of her mates, the jig at which she worked was at the same height above the bench as all the rest. No appreciable gray matter nor cost was involved in raising the jig to a proper height, or in suggesting a less arduous method of winding, but it was good to learn that the pain had disappeared, and better yet to have this worker say to me one day, "You don't know what it means to know that somebody in the plant cares about such things." Is there any one of us who does not share my conviction that such simply accomplished improvements pay dividends out of all proportion to their cost?

—From "Industrial Health Programs Pay Dividends," by MANFRED BOWDITCH, Director of Health and Safety, Lead Industries Association, in AMERICAN INDUSTRIAL HYGIENE ASSOCIATION QUARTERLY, December, 1949.

# An Appraisal of Industrial Hygiene

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TO BE warranted in making an appraisal of industrial hygiene, "the science of the preservation of health," it is necessary to adopt the good old American policy of attempting to interpolate results, not so much in the number of lives saved or the reduction in the number of hours lost from work, but in the effect which all disability, accidental or otherwise, has in the loss of good American dollars. Wealth can only be created through the application of human energy in the processing of natural resources. When human energy is dissipated or impossible of use because of illness or other disability, including strikes, the potential wealth that might have been created is irrecoverably lost, and our world becomes just that much poorer economically. To raise ourselves by our own boot straps from the economic cesspool towards which we are heading today, requires the conservation of every possible man-hour of work....

WISCONSIN had the first effective compensation law in the United States. We have lived with this law since September 1, 1911. We also have what is frequently referred to as the first occupational disease law. It became effective in 1919. It isn't, in fact, a real occupational disease law at all as the term is commonly used. All we did was strike from our law the word "accidental." In Wisconsin we compensate employees for every injury caused by employment—be the injury due to accidental or other causes. For instance, a school teacher, contracting measles, whooping cough, chicken pox, or any other childhood disease, while teaching children in the classroom, may collect compensation if she can show that there was no other exposure.

The legislative committee which drafted and submitted the compensation law to the 1911 legislature, in its report, gave four principal reasons for the enactment of the law. The most important, in my opinion, was the following: "To provide means of minimizing the number of accidents in industrial pursuits. In foreign countries, the working of all compensation systems is accompanied by efforts to reduce accidents. It is the belief that in Wisconsin there should be created certain standards and requirements for safety devices and that the use of these devices should be enforced for the mutual interest of employers and employees of the state. In this connection it is reasonable to expect that where compensation must be paid for every injury, employers will endeavor to reduce the number of accidents for the practical reason that fewer accidents must necessarily reduce the amount of compensation to be paid." This quotation indicates that these legislators had the dollar motive in mind when drafting this law because they realized the enormous toll of human suffering and economic loss could only be lessened by making it expensive not to do a good hygiene job in its broadest sense.

Today, from the standpoint of benefits, Wisconsin has the most liberal compensation law in the United States. Using this law as a base, you might be interested to know the relative level of a few other compensation laws:

| | | | |
|---|---|---|---|
| New York | .832 | Indiana | .671 |
| Illinois | .794 | Iowa | .635 |
| Minnesota | .750 | Michigan | .626 |
| Missouri | .696 | Pennsylvania | .570 |

All other things being equal, compensation insurance rates ought to vary in the same proportion as the law level varies. However, such is not the case.

Obviously there are no composite insurance rates that would be comparable because industries vary from state to state. However, our actuarial department prepared some figures for me which indicate that since September 1, 1911, when the Wisconsin compensation law became effective, through June 1, 1949, which includes the amendments passed by the 1949 legislature, total benefits to workers and their dependents have increased by 151%. During that same period of time, over-all compensation rates have been reduced by 3.5%.

Unfortunately, I'm not in a position to carry the Illinois experience back to 1911, but I do have some figures for Illinois going back to January 1, 1934. Since that time benefits in Illinois have been increased by your legislature by 19.7%, and composite rates in Illinois have been reduced by 45.1%....

NOW let's explore a little the accomplishments in an industry which has been plagued with probably the worst problem from a cost standpoint in the occupational disease field—the foundry industry. You will remember the conditions which existed during the dark days of the depression when the number of unemployed reached such an alarming figure. Dust control had been neglected, primarily because the foundry industry was unaware of the extent of the hazard. Physicians were not sufficiently familiar with the clinical, roentgenological, and pathological problems involved. Compensation boards and courts were swamped with claims and potential liabilities were almost astronomical. In Wisconsin the base rates for gray iron foundries jumped from $1.75 per $100 of payroll in 1926 to a peak of $4.83 in November, 1934. Steel foundries had their rates increased from $2.23 in 1926 to $9.96 in

From an address at a meeting of the Chicago section of the AMERICAN INDUSTRIAL HYGIENE ASSOCIATION, December 7, 1949.

1935. With good, scientific hygiene work, in spite of the enormous increases in benefits previously mentioned, gray iron foundry rates in Wisconsin are now down to $2.15 and steel foundry rates are but $2.19, compared with $2.23 on July 1, 1926.

In Illinois where you have a separate occupational disease law, your rate jumped from 20 cents per $100 of payroll in 1932 for employer's liability coverage for the occupational disease hazard, to $2.99 in 1936 when such diseases first became compensable. Following the last rate revision, the occupational disease rate in gray iron foundries was but 63 cents.

In steel foundries your original rate in 1932 prior to the date your occupational disease law became effective was 34 cents per $100 of payroll. It also jumped to $2.99 in 1936 and is now 77 cents.

It might be of interest to you to know that today the combined rate for traumatic and occupational disease claims in Illinois for gray iron foundries is $2.45 compared with $2.15 in Wisconsin, and for steel foundries it is $2.15 compared with $2.19 in Wisconsin. And please remember, as I told you previously, that the Illinois law is but 79.4% as liberal in its benefits as is the Wisconsin law.

Truly no one can contradict the statement that these figures spell out an accomplishment for which hygienists deserve the highest praise.

BUT so far I have been merely talking about the effect of good hygiene work on compensation insurance rates. We too often forget that there are concurrent economic losses when people are injured or become ill which are vastly greater than the effect of these losses on compensation insurance premiums. The people who have done research in this field have come up with the answer that these concurrent losses are at least four times as great as compensation premiums. You are all too familiar with the general interruption of work immediately after an accident occurs, affecting not only the particular operation, but sometimes an entire plant. Material is damaged; new and less skilled employees must replace those who are incapacitated, with usually a long period of inefficient operation while the new employee achieves reasonable skill. Besides that we mustn't overlook that compensation represents in the aggregate but a fraction of the loss in wages to the employee and his family. Add to that the administrative cost of handling the claim, plus the taxes that are consumed in the payment of administrative costs of industrial boards and courts, and one can easily visualize that the figure of a 400% additional concurrent loss is not an exaggeration.

Nor is that the entire picture. A good hygiene program improves the general health of employees. Accompanying educational work stimulates a greater interest in home and public safety, and in improved health conditions among the families of employees. Again actuaries have made a calculation that the economic losses produced by non-industrial accidents and diseases are 10 times greater than the economic losses caused by industrial accidents and diseases.

However, this is no time to rest on our laurels. There are clouds on the horizon that challenge us to ever greater efforts.

Within the past year compensation benefits have been increased by the legislatures of most every state, and also by the Federal Congress. These increases are in sizeable amounts, as you will note from a reference to a few of the more liberal states:

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|---|---|---|---|
| Illinois | 10.6% | New York | 14.1 |
| Michigan | 16.9 | Massachusetts | 32.3 |
| Minnesota | 6.1 | Oregon | 12.5 |
| Wisconsin | 7.6 | Federal Act | 28.3 |

These figures represent the total increase in both compensation and medical benefits. However, in all of the states listed the previous medical and hospital allowances were for full payment regardless of amount with no time limit, except in Michigan where, in practice, the same thing was true. Therefore, as medical benefits roughly represent one-third of the total cost, the figures I have just quoted should be increased by about 50% to reflect the true increase in compensation benefits alone.

Even though it has been assumed by rating bureaus in computing the value of increased benefits that there was no theoretical increase in medical costs, no one dealing with medical and hospital care these days can overlook the staggering increases in charges compared with only a few years ago. When ward rates in many cities now total up to $14 per day, and fees for a single herniotomy amount to $250, we get an idea of one item in the increased cost of living which we don't consider seriously enough.

And these figures which I have mentioned showing compensation increases, are only mathematical computations. They ignore entirely the unmeasurable costs that are now facing industry when compensation rates per week, coupled with fringe benefits employees are able to collect, approach a very livable wage. Therefore, the incentive to malinger is more than proportionately increased. Also, we are now faced with an avalanche of legislation, a great deal of which is already effective, under which employers will have to pay disability compensation for off-time accidents and illness, to say nothing of the voluntary plans for similar payments or those plans put into effect through pressure of collective bargaining.

All of which, I think you will agree, spells out that prevention will pay even higher dividends than has been true in the past.

SO FAR we have been discussing only the over-all effect of a good hygiene program as it affects over-all compensation insurance rates and our general economic well being. As hygienists concerned with particular problems in your plants, I suspect you would be interested in knowing

just what you can do in the way of effecting savings in compensation premiums that might make interesting reading to your front office.

In compensation rating, there are two principal factors affecting the rate structure. One is called "schedule rating" and the second is called "experience rating."

In Illinois, where I have previously told you the present rate for occupational diseases in steel foundries is 77 cents, it's possible, through compliance with all five factors entering into the schedule rating program, to reduce this rate by 35%. Partial compliance affects the maximum reduction proportionately.

The rate determined after applying such a credit may be further modified by the experience developed in your own plant. For instance, a plant with an annual premium of $1,000 may qualify, depending on its loss ratio, for a credit of 22½%; a risk developing a $5,000 premium, again depending on its loss ratio, may qualify for a credit of 54.8%; a $10,000 risk may develop a credit of 64.3%; a $25,000 risk, a credit of 80.4%; and a risk with a premium of $100,000 or more may, conceivably, develop a credit of 100%, which, of course, would mean that that plant would have to perform the miracle of not having any losses. The credits are approximate.

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## Inservice Training Course in Air Pollution

### University of Michigan, School of Public Health, February 6, 7 and 8, 1950

THIS is the first course in Air Pollution given by the School of Public Health. It is given at the suggestion of workers in the field of study of these problems, who have noted the desirability of an orderly review of the problem in the light of present knowledge.

It will be observed that this course is related to (1) identification of the problem; (2) the tools used in investigation and determination of solution; and (3) the approach employed in some of the problems involving common industrial and other sources of air pollution.

While necessarily somewhat technical in character, the course is intended to serve personnel of a wide variety of interests, such as air pollution control and other public officials, industrial chemists, engineers and management, health officers and physicians of industrial communities, industrial hygiene personnel who render service in this field, and sanitary engineers, especially those concerned with the disposal of industrial wastes.

The Planning Committee anticipates that the more broad and fundamental treatment of subjects provided for in this course may be followed by more intensive treatment of certain selected subjects.

Further information may be obtained by addressing the SCHOOL OF PUBLIC HEALTH, 109 South Observatory Street, Ann Arbor, Michigan.

### Introductory Session

INTRODUCTORY Remarks—HENRY F. VAUGHAN, DR. P.H., Dean, School of Public Health.

"Physiological Effects"—CAREY PRATT MCCORD, M.D., Medical Director, Industrial Health Conservancy Laboratories, Detroit.

"The Community Problem"—H. G. DYKTOR, Commissioner, Division of Air Pollution Control, City of Cleveland, Ohio.

Panel Discussion: Moderator—CLARENCE D. SELBY, M.D., Resident Lecturer of Industrial Health, School of Public Health.

### Contaminants

PROPERTIES and Behavior of Contaminants"—HENRY FRASER JOHNSTONE, PH.D., Professor, Chemical Engineering, University of Illinois, Urbana, Illinois.

"Determination Procedures"—CLEDO BRUNETTI, PH.D., Associate Director, Stanford Research, Inc., Stanford, California.

Panel Discussion: Moderator—DR. WM. G. FREDRICK.

### Factors Involved in Pollution and Correction

METEOROLOGY"—HURD CURTIS WILLETT, PH.D., Professor of Meteorology, Massachusetts Institute of Technology, Cambridge, Massachusetts.

"Dilution"— GEORGE RICHARD HILL, PH.D., Director, Department of Agricultural Research, American Smelting and Refining Company, Salt Lake City, Utah.

"Transformation"—HELMUTH HERMAN SCHRENK, PH.D., Research Director, Industrial Hygiene Foundation, Pittsburgh.

Panel Discussion: Moderator—DR. SCHRENK.

### Air Cleaning Devices

GRAVITATIONAL and Centrifugal Separation"—C. E. LAPPLE, Engineering Department, E. I. du Pont de Nemours & Company, Wilmington, Delaware.

"Filtration Through Porous Materials"—LESLIE SILVERMAN, Sc.D., Associate Professor of Industrial Hygiene, Harvard School of Public Health, Harvard University, Cambridge.

"Electrostatic Precipitation and Ultrasonic Flocculation"—H. W. ST. CLAIR, PH.D., Head, Metals Recovery & Refining Section, Eastern Experiment Station, U. S. Bureau of Mines, College Park, Maryland.

"Washers for Particulate Matter Collection"—A. D. BRANDT, Sc.D., Industrial Hygiene Engineer, Medical Department, Bethlehem Steel Company, Bethlehem, Pennsylvania.

"Gas and Vapor Absorption and Adsorption"—J. LOUIS YORK, PH.D., Assistant Professor, Department of Chemical and Metallurgical Engineering, University of Michigan.

Panel Discussion: Moderator—WILLIAM N. WITHERIDGE, Ventilation Consultant, General Motors Corporation, Detroit.

### Pollution and Controls

SMOKE"—J. W. SHAW, Chief Smoke Inspector, Department of Building and Safety Engineering, City of Detroit.

"Pollens"—*Sampling*—C. J. VELZ Chairman, Department of Public Health Statistics, School of Public Health, University of Michigan, Ann Arbor, Michigan. *Control*—ALBERT H. FLETCHER, Director of the Bureau of Environmental Sanitation, State Department of Health, Trenton, New Jersey.

"Industry"—K. E. ROBINSON, Ventilation Engineer, Division of Industrial Health, State Department of Health, Lansing, Michigan.

Panel Discussion: Moderator—JOHN C. SORT, Acting Director, Division of Industrial Health, State Department of Health, Lansing, Michigan.

"Chemical Plants"—DR. C. A. GOSLINE, Research Chemist, du Pont Company, Wilmington, Delaware.

"Metallurgical Furnace Stacks"—C. A. BISHOP, PH.D., Research Associate, Carnegie-Illinois Steel Corporation, Pittsburgh.

"Truck and Bus Exhaust"—GEORGE M. HAMA, Associate Industrial Hygienist and Chief Engineer, Department of Industrial Hygiene, Detroit Department of Health, Detroit.

"Petroleum Products"—LEWIS J. CRALLEY, Senior Scientist, Chief, Environmental Investigations Branch, Division of Industrial Hygiene, U. S. Public Health Service, Washington, D.C.

Panel Discussion: Moderator—LOUIS CORDELL MCCABE, PH.D., Chief, Office of Air and Stream Pollution Prevention Research, U. S. Bureau of Mines, Washington, D. C.

# Accidents — The Cancer of Industry

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THE WORD "cancer" has come to mean more than a disease—it has come to mean the ultimate, the peak of physical disaster that can befall man. In the light of the most recent scientific investigation it can be stated truly that accidents are the "cancer" of industry. The facts which lead to this conclusion are these:

Accidents cause the loss of more "working years" of life than cancer, heart disease, or any other leading cause of death.

Accidents cause the loss of more "life years" than is caused by cancer or any other cause of death, except heart disease.

Thirty per cent more productive "working years" are lost from accidents than from cancer.

A complete and miraculous cure for cancer would have added fewer thousands of "working years" to the total life expectancy of the American people than would the prevention of all accidental deaths.

These facts mean that industry is robbed of a greater productive potential by accidental deaths alone than by cancer. These findings, the result of investigations conducted by Drs. Frank G. Dickinson and Everett L. Wilker, of the Bureau of Medical Economic Research of the American Medical Association, were published in the *Journal of the American Medical Association.* (138:7, October 16, 1948) These doctors were looking for a new yardstick with which to measure the loss to society from deaths of various causes, for it was obvious to them that the death of a 20 year old person was normally of greater economic and social importance than the death of one aged 50, 60, or 70. They, therefore, hit upon the measures designated "life years" and "working years." In terms of "life years" lost, if life expectancy is 70, then death at 50 means a loss of 20 years of life. They selected age 20 through 65 as the "working years" of the American people.

AS A RESULT of this study, it can be said that the total cure of cancer would have abated less anguish, grief, despair and deprivation than would the prevention of all accidental death. A review of facts of interest shows that in one year alone (1946) there were 16,000 industrial workers killed in industry; two million were injured, and one and a half billion dollars were lost in wages. For every employee rendered noneffective by accidents, there are eight renderd not fully effective. Hidden costs in plant accidents are four times the direct costs, as pointed out in a recent survey of 72 accidents in building erection: The compensation and medical expenses were $209.00; other costs were $937.00. In 97 foundry accidents compensation and medical expenses were $610.00; other costs were $1965.00. These other costs were: (1) lost time of the injured; (2) lost time to aid, stop, gawk, and sympathize by co-workers; (3) lost management time in rendering assistance, making out reports, and training replacements; (4) loss of production through diverted interest and machine stoppage; (5) lessened effectiveness after return; (6) legal expenses.

That our present concern with accidents in industry is well placed is proved by studies which show that more than 98% of claims presented before Workmen's Compensation Commissions are the results of accidents. This does not mean that industrial diseases are unimportant, but that they are better controlled. I think it will readily be agreed that concern cannot be avoided; accidents are a pressing problem—perhaps of more concern than cancer and other individual diseases on which there has been considerably more emphasis.

As safety engineers, nurses, industrial hygienists and physicians employed by industry, it is our job to promote the physical well-being and health of its personnel—to prevent occupational disease and accidents, to prevent catastrophe, pain, grief and sorrow, and to lower time losses resulting therefrom. Where industrial plants are large, we find nurses, safety engineers, industrial hygienists and physicians. Most frequently, however, we find but one or two of these groups represented. This is self-evident when we realize that small industry employs 64% of our working population. The fact that this 64% suffers 70% of all industrial accidents makes it imperative that those of us employed be alert to all the facts and our own potentialities. Small industry has not yet learned that it can afford the specialized services of this group even if on a very limited scale, so it is even more important that we learn to work effectively alone or with an incomplete staff. It is for the purpose of learning more about our mutual problems that we join together in meetings like this. It is for this reason that I have spent much time gathering information which may help us recognize, understand and effectively combat our common problem—the major sources of accidents in industry.

Safety engineers, nurses, industrial hygienists, and physicians furnish medical, mechanical and environmental supervision. They give pre-placement physical examinations: provide first aid, keep records, hold meetings; do industrial hygiene surveys, provide safety programs, safety controls, safety goggles, guards, screens, shields,

Presented at the 1949 Annual Combined Meeting of the Industrial Nurses Club of St. Louis and the Engineering Section of the Safety Council of Greater St. Louis.

shoes and gaiters, fireproof pouring-leggings, aprons, gloves, protective creams and clothing, caps, masks, respirators, exhaustion hoods and enclosures, nets, signs and other safety measures. They take machinery, much of which comes to us already guarded, and improve upon it. But, in spite of all these efforts and measures, we have a continuation of accidents with such sickening regularity that the over-all accident rate of two million per year has not been effectively reduced in almost two decades.

It is equally true, however, that because of the great activities of the groups represented here, the worker today is safest when at work. Statistics prove that workers are injured only half as frequently at work as at home; that nearly seven out of every 10 workers killed annually meet death in non-occupational accidents; that for every four injured on the job there are six injured off the job.

It is a generally accepted fact that 20%, or less, of accidents in industry are caused by mechanical failure, including lack of supervision and faulty housekeeping, whereas 80% of accidents in industry are the result of "human" failure manifested in forgetfulness, carelessness and preoccupation. This means that if our safety programs were 100% effective, but confined only to the technical and mechanical, 80% of the accidents we are having would continue. I believe these figures are a compliment to the job we are doing in the technical and mechanical phases of accident prevention. I am certain that if we were to relax our vigilance in these matters, their percentage of incidence would triple and quadruple quickly; the 63% reduction in fatal accidents that we have achieved since 1912 would surely become reversed so that we would today be killing 46,000 instead of 17,000. We are concerned, however, with how we can improve our record.

A REVIEW of the sources of accidents is certainly in order. If we know where the accidents are occurring, we can take proper steps for their understanding and control. For instance, we know that in the over-all industrial scene 30% of our employees are productive of 80% of all time lost as the result of accidents. And, what is even more astounding, on many identical jobs, 10% of the employees will produce 75% of the accidents. These people are peculiar and apart from the others. They are the ones who suffer the most—whose lives and limbs are most often sacrificed, whose homes and families are broken and torn by disability, death and insecurity, the result of accidents. It is in this group that we find most of the pain, grief, anguish, tears, despair and dread. It is on this group that injury wreaks its shocking, frightful and horrible vengeance, to an extent *far greater than cancer.* It is this group which needs our attention and our help—the accident prone!

To emphasize the importance of this "accident prone" group—the 30%'ers who lose 80% of the time lost, and the 10%'ers who have 75% of the accidents—we need only to be reminded again that since 1932 there has been no reduction in the over-all industrial accident rate of two million per year. The fact that we must direct additional effort to the accident prone group is recognized by such authorities as Dr. W. P. Yant, of Pittsburgh, Chairman of the Committee on Research of the Presidents' Conference on Industrial Safety, who recommends "the study of the causes of accidents, including the psychological factors of accident proneness."

I hope that none of us has the attitude that as specialists we have no concern in this problem —that no one of us thinks it does not concern him—that no one of us says, "I'm not a psychologist—it's not my job—we're doing o.k." For I repeat: since 1932 there has been no reduction in the over-all industrial accident rate of two million per year. If my argument needs any further support, may I quote Lloyd A. Blanchard, of the Federal Safety Council, who says: "As a nation, (however), the frequency of industrial injuries has shown an upward trend for the past nine years." Certainly we should continue the fundamental methods and practices that have proved so effective technically and mechanically and, by taking advantage of our understanding of the causes of "human" failure, do the things that we know, by exercise of common sense, will help.

The members of the "accident prone" group are these: (1) Those who have mental and physical defects and are employed without regard for them—the smallest group. (2) Those possessed of insufficient skill or knowledge—including new workers with inadequate or incomplete training. (3) Those who have the so-called "improper attitudes."

Fortunately, in industry, one does not need to be a physician to recognize most of those who have mental and physical defects or handicaps and have been employed without regard for them. The mentally defective, or mentally handicapped, can usually be recognized by their peculiar actions, traits and responses. It is incumbent that we see to it that the employable mentally handicapped are properly placed and not given jobs where either their safety, or the safety of others, may be compromised.

Those with physical defects are most easily recognized, but we must remember that physical disability need not mean occupational disability. Indeed, it has been shown that 80% of the physically handicapped can be immediately employed gainfully—requiring selective placement only. To be most fully effective, we must know well and appreciate the mental and physical requirements of jobs in our own plants. The proper placement and integration of the handicapped into industry opens the door to the safe utilization of the vast productive potential of these people. The superior performance records of selectively placed physically impaired workers is a matter of record and emphasizes the wisdom

of their utilization and the unwise policy of acceptance only of those able to pass rigid physical examinations.

THE second largest group of the accident prone is composed of those possessing insufficient skill or knowledge to do a job safely. They are most easily identified and trained by those who have superior skill and knowledge. This knowledge must be demonstrated and exercised by the leaders in our plants and is most effective if it excites the interest and support of all ranks in doing their jobs safely. We should give some thought to the fact that 99% of industrial accidents involve the infraction of no statutory law. In other words, it is not "against the law" for workmen to kill themselves or others, even though it may be the result of ignorance or lack of knowledge. It is of the utmost importance then that we include complete training and adequate supervision of new employees in our safety programs. This group has been kept small by the constant alertness of those concerned with safety, and because the connection between not knowing how to do a job and the consequent accidents is so very obvious.

We come then to the third and largest group of the accident prone. This is composed of those who have the so-called "improper attitudes." Here we find most of the 10% who will produce 75% of accidents on identical jobs and most of the 30% of those who lose 80% of the time lost as the result of accidents. In this group we discover:

The careless worker, the one who does not hesitate to take chances. He gets thrill satisfaction out of his carelessness, and, until his supervisors recognize him and enlist his active participation and support in the safety program, he will continue in this group.

The inattentive worker, the one who does not pay attention to the job at hand but who sits reading a racing form, newspaper, comic book; gazing or gawking out of the windows; unconscious of what is going on near him at the moment. Education and supervision are effective in combating this group.

The rugged individualist, who does it his own way. He is known to all of us. Usually a bad experience, quickly capitalized upon, will lead to conformity, if his delinquency has not been recognized, and corrected beforehand by adequate supervision.

The practical joker, with whom we are all familiar. He is known to most of those about him. He needs to be "corrected" quickly and have his personal responsibility in the safety program made clear.

The unhappy worker, the one plagued by private worries and cares, such as illness at home, disturbing home and family situations, and financial problems. He is ordinarily easily identifiable if the people about him are sympathetic, conscientious and alert. It takes so little time to be solicitous.

THE worker who is disgruntled or dissatisfied is perhaps our greatest concern. The ease with which people become malcontent is emphasized by polls which indicate that about 55% of people are dissatisfied with their jobs or work. The disgruntled are thought of as rebellious, resentful, and jealous of supervision; resistant to being taught anything, including safety. Dissatisfaction may partially spring from the feeling that the worker is an inadequately paid individual, that he works too hard, or that the company is not genuinely concerned with him as an individual. To him this may be evidenced by poor environmental conditions or surroundings at work, dirty plant housekeeping, lack of safety programs, high incidence of accidents, inadequate heat and ventilation, poor lighting, inadequate or poorly cared for locker rooms, drinking and eating facilities, wash rooms, towels, toilets, and tissue. I'm sure I am not being original when I say that not infrequently better labor-management relationships have been more stimulated by comfortable toilet seats than by some seats at conference tables. Perhaps more attention to the former would make less attention to the latter necessary. The fact that, in a recent survey, 36% of new employees designated safe and healthful working conditions as the most important factors in their welfare makes attention to these things mandatory. We *must* take *inventory for health* and act on our findings in our own plant hygiene surveys. The feeling of lack of concern with the employee as an individual can be dispelled by conscientious recognition of the worker as an individual.

Psychologists tell us that the individual needs a sense of belonging, that he is wanted, that he needs a feeling of achievement—that what he is doing is necessary. Attention to these things produces that mental state of zeal, spirit, hope and confidence known as morale. To produce it your foremen must be cautious, tactful, fair and understanding, and treat the worker the way he would like to be treated. Satisfaction with work relationships and conditions will lead to contentment, security and happiness on the job. The fewer people you have who are unhappy, disgruntled and dissatisfied, the fewer you will have who are preoccupied by attitudes and things other than their work. By preoccupation I mean engrossed, lost in thought—already occupied so that their job is at the moment out of their minds. It is in that same moment that their fingers so often leave their hands; their eyesight, their eyes; their lives, their bodies.

Members of the accident prone group will frequently display one or more of a number of easily recognizable traits. Usually all one needs to discover these defects is a genuine interest in people, a friendly, kindly attitude and the taking of enough time to make inquiry in a genuine effort to be of help, whether he be physician, nurse, safety engineer or industrial hygienist. A few of the characteristics that we should all be able to recognize are (1) poor attendance

records; (2) habitual use of alcohol; (3) eccentricity; (4) over-aggressiveness; (5) over-sensitivity; (6) over-irritability under stress; (7) feeling of insecurity; (8) feeling of inferiority.

If we look closely we will find that these people are the ones who are most frequently emotionally upset. We should give them a large part of our attention, training and supervision because it has been truly said that no one who is emotionally upset should be working with moving machinery any more than if he were intoxicated.

IT IS a challenge to us then to note the information we have gleaned through our own experiences and the experiences of others. I have stated that accidents cause the loss of more "working years" of life than cancer; that accidents cause the loss of 30% more productive "working years" than cancer; that a complete cure for cancer would affect the "working years" of life less favorably than the prevention of all accidental deaths; that 16 to 17 thousand are killed annually in industry; that for every employee injured there are eight rendered not fully effective; that hidden costs in plant accidents are four times above direct costs; that the over-all accident rate of two million per year has not been effectively reduced in years and, in fact, has shown an upward trend for the past nine years; that 80% of our accidents arise, not from failure of machines, but from failure of the human machine; that 30% of our personnel lose 80% of time lost; that 10% of our workmen on identical jobs will contribute 75% of the accidents in those departments.

I have spoken of the recognition of the largest group of offenders designated the accident prone group. We know that it has its representatives in every industry, that they have repeated accidents, the result of emotional upsets and preoccupation. We understand that they can be discovered by diligence and application of common sense—that once discovered, more time, attention, training and supervision should be given them so as effectively to reduce their accident proneness.

Once we are sure of these, our common problems, it is up to us as *Salesmen of Safety* to provide the leadership in enlisting the interest of the heads of our organizations in our problems and to make known to them their responsibilities, for it is the responsibility of top management to demonstrate to the worker that it, too, is vitally and genuinely interested in the safety program—in accident prevention and reduction—that it is checking up on causes and is trying to eliminate them—that it is trying favorably to influence the attitudes and interest of the workmen. In these things the best results will be obtained only if the active support of all ranks is solicited. It is up to us to see that that interest is maintained at a peak in all of our plants.

If we believe in accident prevention and understand its virtue; if we are genuinely interested in men, their families, their happiness and their homes; if we are interested in sound fingers, sound hands, sound limbs, sound eyesight; if we are interested in prevention of death, destruction, disability, deprivation, pain and anguish; we will, in the light of our present understanding, re-shape our safety programs, which have been likened unto wheelbarrows, because to get anywhere with them, we have to push them.

(915 Olive Street, St. Louis 1.)

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# Dermatitis in the Making of Chocolate Candy

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IN ORDER to establish the diagnosis of an industrial dermatitis, the physician must be familiar not only with the mechanical and manual operations, the chemicals and biologicals used, and the facilities supplied for cleansing, but also with the manner in which these things react on the skin. The importance of this latter point was recently emphasized in order to prove liability so that an employee could justly receive workmen's compensation for a disabling dermatitis.

## Case Report

W. B., a man of 30, employed in the manufacture of chocolate novelties in a candy factory was first seen on 1-5-48, with an eruption on both forearms of seven days' duration. Examination disclosed marked hairiness of the forearms with many furuncular and folliculopustular lesions. Both forearms also showed a moderate degree of edema. A diagnosis of furunculosis and folliculitis due to contact with chocolate was made. Treatment consisted of potassium permanganate compresses (1:10,000) and a Burow's paste. Twenty-four hours later the patient complained of pain and increased swelling of the right upper extremity. At this time there was a distinct lymphangitis of the right forearm and arm, and the patient showed an elevated temperature of 100°F. Blood sugar was 93. Treatment continued on an ambulatory basis with Burow's compresses (1:20) and penicillin (300,000 units) daily for seven days. Response to treatment was slow, and it was not until 4-19-48 that the patient was discharged as completely cured. During this time he was totally disabled for two months and partially disabled for two months. On 2-19-48 he was patch-tested with chocolate and cocoa-butter, the two substances he used while making the chocolate candy. The results of the patch tests after 48 and 72 hour readings were negative.

On the basis of the negative patch tests the insurance carrier refused to assume any responsibility for the medical care of the patient and refused any compensation for the time lost from employment. Despite the explanation that this dermatosis was not due to sensitization but to an entirely different mechanism—as will be elaborated shortly—liability was not accepted. The case, therefore, was brought before the Workman's Compensation Board of the State of Pennsylvania.

Before appearing as an expert in any case of industrial dermatitis, the physician should be familiar with all the procedures and operations a worker carries out in his job. This is learning "on the spot"—when the dermatologist personally inspects representative plants and examines the working personnel both at their jobs and at the completion of their work. The duties of this particular worker were to break up 10-pound slabs of prepared milk chocolate (a mixture of milk, pulverized sugar, chocolate, and cocoa-butter) into smaller chunks. These smaller pieces were then dropped into a large vat of hot melting chocolate. This procedure frequently resulted in a back splashing of hot liquid chocolate over the worker. The liquid chocolate in the vat was drained into a filling machine where the operator, by means of a foot lever, regulated the flow of the hot melted chocolate into metal moulds. This operation also resulted in a splashing of the hot liquid chocolate over the forearms and clothing of the operator.

IN SURVEYING the chocolate candy industry of Philadelphia Industrial center,* tours through factories revealed several distinct dermatological conditions to which workers were subject. The dermatoses found to be representative of the industry were:

1. Eczematous eruptions (erythema, edema, papules, vesicles, oozing and crusting) of the hands and forearms due to sensitization to various substances, as chocolate, essential oils, flavoring extracts, etc.

2. Burns of the hands and forearms due to splashes of the hot ingredients on the skin.

3. Paronychia due to depositions of chocolate under the eponychium. Poor cleansing technic on the part of the worker allows the chocolate to settle under the skin at the nail folds thereby affording a favorable pabulum for pyogenic and monilial infection.

4. Furunculosis and folliculitis. The mechanism responsible for these conditions is: The hot chocolate syrup, splashed on the forearms, deposits on the hairy and glabrous areas of the skin. As the chocolate cools, it solidifies. In cleansing, the worker will scrape off the solid chocolate and, in so doing, will pull out a number of hairs. The trauma, in forcibly removing the hair, provides a portal of entry where pyogenic organisms grow on a favorable culture medium

*A series of papers in the dermatological field review the hazards encountered in the commodity goods industries of the Philadelphia Industrial Center. These papers are incorporated as part of the lecture course in "Industrial Dermatitis" given to the post-graduate students in Dermatology at the Graduate School of Medicine, University of Pennsylvania.

provided by the imbedded sweet chocolate. Interestingly, this type of eruption rarely occurred in women or Negro workers. This is explained simply by the fact that women and Negroes are apt to show non-hairy forearms. This observation emphasizes the importance of choosing the correct worker's skin for a job, and also exemplifies one of the predisposing factors, hairiness, which might impair the defense mechanism of the skin against external irritants.

It was only necessary to explain this latter mechanism, as witnessed in touring the industry, as the cause of the furuncles and the folliculopustular lesions, so that the Compensation Board deemed it advisable to award a verdict in favor of the claimant. Compensation was paid to the worker for time lost and payment was made for medical services.

SUMMARY: (1) Descriptions of the types of eruptions prone to occur among chocolate workers in candy factories were reviewed. (2) The mechanism in the production of these eruptions was explained.

CONCLUSION: A case of furunculosis and folliculitis in a chocolate candy worker was reported, and the importance of understanding the mechanism responsible for these infections was stressed. Such knowledge will enable the expert physician to establish the criteria necessary for a diagnosis of a case of industrial dermatitis.

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## Full Front-Office Backing

WHAT incentive is there to the young and aspiring M.D. to spend years of his youth and large amounts of his none-too-ready cash in perfecting himself for work which may well be rewarded, despite his competence, with earnings far less than he could gain in private practice? This question brings us to the steps of industry itself, and it is up these steps that we must pass in seeking to bring about the enlightenment that will have to come before anything approaching universally adequate health programs is attained in our manufacturing establishments. What are the major difficulties here? One, I believe, is continuance in some management quarters of the old idea that medical service is a necessary evil, to be secured at the lowest possible cost.... Another is the inability of the front office, which is used to laying down the law to its production departments, to conceive of dealing with its medical department in any other way. Yet most doctors who are really worth their salt are pretty independent critters and have no intention of being told by a mere layman how they should conduct their work. It is my firm belief that, if the managers of all our larger industries, in seeking medical and health service, would raise their sights in terms of professional ability, salary and that intangible called personality, to the level achieved by some that I could mention, and, having done so, would give their doctors full front-office backing but otherwise leave them alone, the professions, the schools, the workers and the corporations themselves would all be the gainers.

—From "Industrial Health Programs Pay Dividends," by MANFRED BOWDITCH, Director of Health and Safety, Lead Industries Association, in AMERICAN INDUSTRIAL HYGIENE ASSOCIATION QUARTERLY, December, 1949.

# Dental Program in Industry

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THE IDEA of a dental program in industry is new to most industrial physicians, to management, and to the dental profession. It is essential, therefore, that its legitimate objectives and the means by which they can be achieved be carefully defined at the outset. The prevention and treatment of occupational diseases and injuries by the industrial physician is well understood and accepted, but when we begin to consider conditions that are not strictly occupational, the propriety of including them in an industrial health program may well be questioned. It is our own feeling that in both medical and dental disorders of non-occupational origin the industrial physician should concern himself only with case finding and refer all treatment to private physicians or dentists.

In order to carry out an effective case-finding program, the industrial physician has two means at his disposal. First, the pre-placement examination, now standard practice in almost all large industries, and, second, the periodic examination, which is equally valuable but for lack of adequate personnel and facilities is frequently neglected. At the Merck Plant Health Department the results of these two examinations have been applied in the promotion of dental health, although to a limited extent thus far. This new departure was based on the concept that any measures that contribute to the general physical well-being of an employee are not only beneficial to himself by enhancing his comfort and enjoyment of life, but will also benefit his employer by diminishing absenteeism and increasing work efficiency.

Without going into the controversial question of the exact relationship of dental infection to system illnesses, it is reasonable to believe that dental sepsis has an adverse effect on the health of the individual and that severe dental infections have a direct influence on the incidence of absenteeism and on work efficiency.

The program now followed in this plant is designed to avoid the more serious end results of prolonged neglect of the teeth and to promote oral hygiene. It consists primarily of an initial examination in which the general condition of each tooth, whether carious, absent, filled, or otherwise abnormal, is noted and recorded. If the employee's dental status is satisfactory, nothing more is done until his next routine physical examination, which is usually made a year later. At that time the same procedure is repeated. Those few employees who are exposed to substances likely to be directly harmful to the oral mucosa and teeth are given more frequent checkups. Such substances include mercury and the fumes of strong acids. If any abnormality is noted, however, either on the first examination or on any of the subsequent periodic examinations, the employee is informed of it and strongly advised to consult his dentist. The plant physician does not in any way influence the patient's choice of a dentist, since he would consider this a violation of his ethical relationship with the dental profession.

After he has advised the patient that dental care is necessary, the physician makes a notation to recall him in about three months. At that time he is asked whether he has consulted a dentist, and his teeth are again examined to determine whether any corrective measures have been taken. This is not intended as a check-up on the kind of dental care he has received, but rather to make sure that he actually has sought such care. In the majority of instances this follow-up system has brought about a greatly improved state of dental and oral hygiene among the employees. The program has also been of value to members of the dental profession since it has enabled them to see many more patients with dental disorders in the early stages and thus to prevent the development of serious conditions presenting therapeutic problems at a later time.

IN ORDER to indicate the influence of economic and social conditions on standards of dental care, two groups of employees examined in our Plant Health Department have been selected for comparison.

DENTAL STATUS OF TWO SELECTED INDUSTRIAL GROUPS

| | Average No. of Teeth Affected in | | | |
|---|---|---|---|---|
| | 62 Executives | | 70 Workmen | |
| Condition of Teeth | Under 40 Yrs. | Over 40 Yrs. | Under 40 Yrs. | Over 40 Yrs. |
| Caries | 0 | 1.0 | 2.88 | 2.66 |
| Teeth missing | 2.29 | 3.18 | 6.08 | 7.33 |
| Filled teeth | 7.52 | 6.83 | 4.17 | 2.88 |
| Replacements | 0.25 | 1.71 | 0.33 | 0 |

The first group consisted of 62 executives; the second, of 70 employees chosen at random among the workmen. Each group was subdivided into individuals under 40 and over 40 years of age in order to determine whether standards of dental care have changed appreciably in the last generation. In the executive group not one under 40, and only one over 40, had an obviously carious tooth. (See table.) As might be expected, however, the older individuals had more teeth missing, the average number being 3.18 as compared with 2.29 for those under 40, and they also had more filled teeth—7.52 as against 6.83. The number of artificial teeth averaged 1.71 and 0.25,

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respectively, in the older and younger groups. The teeth of the executive group either were already in good repair or were receiving the necessary dental attention at the time of our examinations. In other words, those who were well educated and financially able to secure dental care did not require any stimulus from our Plant Medical Department.

Among the workmen, however, the situation was very different, even though all of these people were receiving good pay and there had been no unemployment in our industry since the beginning of the war. The average number of obviously carious teeth in the workmen under 40 was 2.88, and in the older group 2.66. The number of missing teeth was also much greater than in the executive group, indicating the lack of proper care in the past, in spite of the greater age of the executive group. Among the workers those under 40 had an average of 6.08 teeth missing, and those over 40 had 7.33. The number of filled teeth was distinctly less than in the executives, 4.17 in the younger group and 2.88 in the older. This suggests that the incidence of caries was no greater, but that proper attention had not been given by the workmen to their carious teeth. It is of interest that the total number of filled or carious teeth in the workers was very close to that of filled teeth in the executives. Thus the possession of money and education apparently does not prevent tooth decay but does lead to obtaining proper dental attention and a greater salvage of affected teeth. The average number of replacements was much lower in the workers' group, that is, when a tooth had to be removed, it was less frequently replaced.

This group was also studied on a sex basis, with the expectation that the women would, for cosmetic reasons, have taken better care of their teeth. Unfortunately this did not prove to be the case. In fact, the average number of carious teeth in the women was slightly greater than in the men, and the average of missing teeth was almost the same. It is thus apparent that vanity is not always an adequate incentive for seeking dental care. As mentioned before, it does not seem that a reasonably good and steady wage is sufficient either.

CONSIDERING the whole group of 132 persons studied, it appears probable that the most important factor is early training in the importance of proper dental care. We, therefore, tried to counteract the effects of early neglect in the worker group by advising every person with dental defects to visit his dentist. Each of the 70 employees was then recalled for a check-up three months later. In many instances one check-up was sufficient, but over half (40) had to be recalled three or more times. Even then, only 12 more could be induced to receive treatment, whereas 28 of the original 70 could never be persuaded to visit a dentist. One man was called back 21 times, but could not be persuaded to have his teeth attended to. Several others were seen 10 or 15 times without results. In spite of this rather discouraging record we still feel that the effort has been worthwhile, since after all 42 people were induced to see a dentist and did receive the needed treatment. In such a small group, it is impossible to determine whether this program has resulted in better general health, greater work efficiency, or decreased absenteeism. Nevertheless, a great deal has been achieved in some individual cases. This cannot be expressed statistically, but there is a real satisfaction in seeing a person who once had a mouthful of foul snags now wearing suitable dentures. The statistics cited here do not cover all the people in this plant who have been examined and referred to a dentist during the past several years. As a matter of fact, we have examined the teeth of over 5,000 people and a very large percentage have found their way into the offices of the dentists in our community. We cannot help but believe that this has been to the advantage of the dental profession as well as our employees, and we have the impression that it also has been of value from the point of view of work efficiency and decreased absenteeism.

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## The Spirit We Call Good Will

DOES industrial unrest, which is one of the hot subjects of our day and age, seem to you to be a strange phenomenon, the result of radical teaching? Or is it a natural result of mass production, caused by the inevitable human friction of thousands of men working together. In my humble opinion, it is the latter; and the only oil that can reduce the friction is a spirit that is wise enough to know and understand, patient enough to teach, unprejudiced enough to be just, and kind enough to help. This is the spirit we call GOOD WILL.

—From an Address by JOHN S. LAMBIE, M.D.

# Management of the Common Cold with Neohetramine (Anahist)
## —A Preliminary Report—

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THE CLINICAL success achieved by the use of the antihistaminic drugs in the management of the common cold[6,7,8,9,14] poses for the industrial physician the question of the role of these drugs in industry.

The inconvenience, discomfort, and cost of the common cold, to employer and employee alike, are factors of great magnitude which all industry recognizes. The cold increases absenteeism. For management it means less production and higher cost; for the employee, discomfort, possible medical complications, and a loss of take-home pay.

Certainly up to now the armamentarium of the industrial physician has contained little effective for either the prophylaxis or treatment of this stubborn medical problem. In an effort properly to evaluate this question and contribute to our knowledge of this most costly of all industrial disease problems, we undertook a mass clinical investigative project, striving to study more than 1,000 employees in our various plants.

A careful review of the literature and the work done by others in the field of upper respiratory diseases revealed that the use of the antihistaminic drugs in the management of the common cold is neither a new idea nor is it illogical in the control of acute upper respiratory afflictions.

As far back as 1910[1] evidence began accumulating to substantiate the observation that histamine, found normally in all tissues, is released in allergic reactions, and that the major cause of allergic symptoms is the presence of increased histamine content in the sensitized tissue. True, we have yet to find agreement on the etiology of the common cold, but at this date our thinking and evidence are crystallizing on the theory of tissue injury with activation by a filterable virus, as yet unclassified, as the causative agent in the common cold.

In 1940 Fox, Horned, and Peluse[2] studied over 1000 cold susceptible subjects and found that eight out of 10 subjects either had allergies themselves or came from families with allergic backgrounds. Further work by Fox and Livingston[3] confirmed the role of allergy as an important factor in the susceptibility to colds, and now it is conceded by many careful investigators in the field that the "common cold" is an allergic response in susceptible persons to contact with a specific virus which is the cold virus or its products.[4] Accordingly, as we have sensitivities responsible for hay fevers and other allergies, we may have an allergic reaction to the cold virus itself, or some stimulating toxic factor that the virus produces. This allergic reaction, associated with increased histamine, initiates the clinical syndrome we recognize as the early manifestations of "the common cold." In further support of the histamine viewpoint Troescher-Elam and her co-workers proved that the nasal secretions of persons with colds actually contain histamine.

This physiological background stimulated clinical research on the potentialities of the antihistaminics in the management of the common cold. In rapid succession came the observations and reports of such workers as Brewster,[6,7] Gordon,[8] Murray,[9] and Arminio and Sweet[14] who suggested that an antihistaminic drug alone could successfully abort the common cold and, single-handed, afford symptomatic relief. However, as encouraging as these reports were, there has been one persistent criticism of the use of the antihistaminic group of drugs—SIDE EFFECTS. The side effects of most of the available antihistaminics—drowsiness, dizziness, nausea, aggravated headache, nervousness—all were so undesirable, particularly and obviously from the industrial medical viewpoint, as to eliminate them from practical use. The possibilities of accident to employees as a result of drowsiness, dizziness, or irritability on the job precluded the wide-scale use of antihistaminics unless we could establish a drug devoid of these toxic manifestations yet still effective.

Beginning in 1933, when the first antihistaminic drugs appeared in French laboratories, and up to the present many of these compounds have been tested with varying degrees of toxicity evident. In 1947 Reinhard and Scudi[10] reported to the Society for Experimental Biology and Medicine that Neohetramine® (Anahist®), one of the later antihistaminics, is less toxic than other antihistaminic agents and in therapeutic doses produces far fewer side reactions than any other antihistaminic. During the ensuing two years, observations by Friedlaender and Friedlaender,[11] Criep and Aaron,[12] Schwartz and Reicher[13] and Schwartz[15] all reported a relatively low incidence of side effects with Neohetramine, particularly as compared to other antihistaminics.

Of special import is the observation of these investigators that repeated blood counts, urinalysis, and blood pressure determinations remained unaffected by prolonged administration of Neohetramine. There is no evidence that there are any pathological effects from the use of this drug even in larger doses than those we have employed.

In view of the exacting requirements for an antihistaminic that could be safely and effectively applied, particularly to the management of the common cold in industry, Neohetramine appeared to be the drug of choice, and therefore, in Janu-

Neohetramine and Anahist are registered Trademarks for the brand of Thonzylamine Hydrochloride.

ary, 1949, we started an extensive investigation.

A group of volunteers were recruited in our various plant locations and placed on Neohetramine 50 mg. four times daily, after meals and at bedtime, with the express purpose of observing the prophylactic effects of this particular drug. Another group, observed for therapeutic effects, was also placed on a similar dosage of 50 mg. of Neohetramine four times daily for acute symptoms of the common cold. Although effectiveness of the drug was observed in both groups there was some incidence of side effects such as dizziness, drowsiness and headaches. Although these were mild, they could not be tolerated from the industrial physician's standpoint and further investigation was indicated. At the same time other workers were exploring the problem of use and proper dosage levels and concluded that the optimum dosage of Neohetramine is half the 50 mg. dose originally used, or 25 mg. four times daily. These same workers reported practically no incidence of side effects and no diminution of the effectiveness of the drug even though the dosage was halved.[13,14,15]

## Clinical Procedure

STARTING with this further observation, we introduced the drug Neohetramine in the dosage schedule of 25 mg. four times daily to determine the therapeutic and prophylactic effectiveness as well as any side effects, if such should be evident. Our series included 1745 men and women employees. Of these 782 were on a prophylactic routine of 25 mg. four times daily, with a minimum of six weeks duration and many for as long as three months, at the time of this writing. A second group—963 in number—was placed on the therapeutic application, taking the drug on an average of four days for treatment of acute common cold symptoms. A third group of 250 were given placebos under the same regimen as the prophylactic study.

PROPHYLAXIS: In the prophylactic study conducted in our various plants, there were observable signs of colds in 17 to 25% of the subjects in the several groups. A control group showed an incidence of colds amounting to 65%, these having one or more colds during the same period.

A clinical check on those who did succumb to a cold despite prophylaxis with this drug revealed that the symptoms were of lesser severity, and that the duration of the colds averaged two to four days, in contrast with the seven to nine day average experienced heretofore by the same individuals taking usual cold medication.

Of particular interest to the industrial physician is the fact that not only is the incidence of the cold reduced, but the lesser duration and decreased severity of symptoms meant that the individuals lost less time from work, and their efficiency was not appreciably impaired.

In the prophylactic study, of 782 individuals, a total of 29 complained of side effects, and of the 963 on therapeutic regimen, 15 revealed side effects. These side effects were dizziness, signs of drowsinss, headaches, skin rash, nausea and diarrhea. Of the total 1,745 people observed, we computed incidence of 2.5% side effects. However, in the placebo control group, we observed comparable figures for side effects, illustrating the extreme difficulties encountered in any clinical investigative study where we are dependent on subjective interpretation and the ever present psychogenic factors. Our experiences parallel those of Brewster who reported 10% side effect in a placebo group.[16] It is interesting to note in this connection that Phillips and Fishbein[17] observe that of 74 individuals taking aspirin for the common cold, 10, or 13.5%, "discontinued treatment because of gastro-intestinal disturbances and dizziness."

TREATMENT: Of 963 individuals who reported with cold symptoms of less than 48 hours duration, an average of 83% showed effective therapeutic results as manifested by complete alleviation of symptoms in an average of two days after the beginning of treatment. Our clinical experience confirms that of previous reports indicating that the time factor is critical in determining the severity and duration of symptoms from a therapeutic standpoint.[6,7,14,16] The sooner administration of the drug in the history of the cold begins, the shorter the duration and the less the severity of the symptoms.

## Discussion

WITHIN the limits of sampling error, the results of our investigation are of the same order and in keeping with those of previous investigators. It may be significant at this time to point out that, in our experience, every investigator who has reported on any sizable series of cases in the use of antihistaminics in controlling the common cold has observed positive results. There still remains the question of explaining the failures reported in these investigations, and in ours.

Our clinical experience with this drug has sharpened our feeling that the common cold is not a homogenous entity. At one end of the range are "colds" that approach the appearance of classical allergic vasomotor rhinitis. At the other end of the "cold" scale are cases that resemble more a specific pathogenic attack even approaching the pattern of a low grade influenza. The establishment of the cold syndrome is extremely difficult to standardize and is open to continuing research and discussion. For the industrial physician, however, the empirical experience with the antihistamines suggests that, while we still await basic decisions of questions of etiology and differential diagnosis, we have here a drug that gives us a prophylactic and therapeutic agent superior to anything heretofore available.

In fact, in the light of the accumulating evidence, the question for the industrial physician is no longer whether to use an antihistamine, but rather which one of the family is the most suitable for our particular needs. Here the major factor is toxicity. Our experience suggests that we must regard the antihistamine family in much

the same light that we do the sulfonamides, which range from the first developed toxic members of the group to the newer and better tolerated sulfas now in common use. So with the antihistamines. There is still some recorded opinion which groups these drugs together, without discriminating their peculiar individual characteristics. Drowsiness and dizziness, the most objectionable of the side effects, particularly to the industrial physician, make some of these drugs inacceptable. Our experience indicates that at least one of the antihistamines—Neohetramine—can be used with safety and effectiveness in the field of industrial medicine.

Finally the antihistamines are not a cure for the common cold since they are neither antibacterial nor antiviral agents. Their effect is entirely symptomatic. However, by aiding and keeping the upper respiratory mucosa in a state of normal physiological function, the natural defense mechanisms against bacterial and viral invasion are sustained.

## Summary

SEVEN hundred and eighty-two employees were observed over an average period of three months to evaluate the prophylactic effectiveness of Neohetramine (Anahist) 25 mg. four times daily.

One hundred and seventy-nine (22.8%) of the above group came down with the acute symptoms of the common cold as compared with 163 of 250 (65%) in the control group.

Nine hundred and sixty-three persons were treated therapeutically with Neohetramine 25 mg. four times daily.

Seven hundred and ninety-nine (83.0%) responded well to treatment as evidenced by lessened severity of symptoms and shorter duration of their illness. The duration of the cold with treatment averaged two to four days.

One hundred and fifty-five (17%) received no benefit from the drug and may be classified as failures.

Forty-four (2.5%) of the 1,745 employees observed reported side reactions. For the industrial physician it is important to note that reported side reactions were such that they did not interefere with the worker's ability to discharge his routine duties.

## Conclusions

IT IS SUGGESTED the majority of the common colds are in their initial stage (within 48 hours of onset) either allergic in character or a histamine-like phenomenon.

2. The prophylactic administration of Neohetramine 25 mg. four times daily, will in a large percentage of cases prevent the incidence of the common cold in those individuals who ordinarily, without this protection, would have suffered one or more attacks.

3. The prompt administration of Neohetramine in those individuals who suffer a common cold will either abort the cold within 24 to 48 hours, or shorten the duration to an average of two to four days, or will slow the progression of symptoms to a point where they become comfortable, and can remain on the job and lessen their potential as a source of contagion.

4. The effectiveness of the treatment is inversely proportional to the lapse of time following the onset of symptoms. Treatment initiated beyond 48 hours of onset of symptoms can be considered as ineffective. Treatment initiated within the first 24 hours after onset of symptoms apparently in most cases aborts the cold symptoms in about one day.

5. The effectiveness of the antihistaminic drugs is directly related to dosage. The established optimal dosage of Neohetramine is 25 mg. after meals and before retiring (total dose 100 mg.).

6. Consideration, particularly in regard to toxicity, must be exercised in the choice of the antihistaminic used. Because of its very low incidence of side reactions at therapeutically effective doses, Neohetramine satisfies the requisites for industrial application in the management of the common cold.

(500 Fifth Ave., New York 18.)

[NOTE: The author wishes to express appreciation to the professional staffs of the Sylvania Electric Products Corporation for their contribution and cooperation in making this preliminary report possible. Further appreciation is extended to the Anahist Co., Inc., who supplied Anahist for this clinical investigation.]

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## ASSOCIATION NEWS

### The Managing Director's Trip To the West Coast and Hawaii

DR. HOLMBLAD'S visit to Hawaii in November to attend the Sixth Annual Meeting of the TERRITORIAL ASSOCIATION OF PLANTATION PHYSICIANS was a happy combination of business and vacation. With MRS. HOLMBLAD he left Chicago Monday morning, October 31, traveling by plane, and arriving in Seattle that evening. The following is a report of the trip in his own words:

"We had an eventful Tuesday in Seattle, starting out in the morning with a visit to DR. ROGER ANDERSON'S office, recalling pleasant memories of our intern days at Cook County Hospital. In addition to seeing the city business and dock district, I visited the Swedish Hospital, as well as other hospitals, with DR. ANDERSON and noted their uniformly excellent appointments.

"Among other things we noticed that some of the hospitals were serving supplementary feedings to patients who did not like the routine menu; in one of the wards I saw sandwiches, ice cream, and milk and cocoa brought in to supplement the noon meals. It was a real thrill to make rounds with DR. ANDERSON and see his interesting work, particularly in the early ambulation of spinal fusions. I had the pleasure also of visiting the Rehabilitation Department and discussing occupational therapy and rehabilitation with those in charge. We were interested to see the number of small doctors' hospitals and clinics throughout the area. These render a high grade of medical service on a group basis, maintaining the patient physician relationship to an excellent degree. We had delightful weather, with not a drop of rain. The warm Japanese current in the Pacific gives a sub-temperate climate to this area, so that snow is rare and never lasts over 24 hours. In the midst of this wonderful apple country I was unable to get a baked apple anywhere. A characteristic of labor conditions in Seattle was the most hopeful sign I noticed throughout our trip. The labor unions are demanding the highest possible wages for all workers, but they have gone a step farther and say, 'If we get top wages, we insist that all of our people give a full day's work and the best possible production for that day's wages.' Thus instead of gauging wages to the poorest worker, they are building up incentives along the lines of the best worker with the maximum of production. Under such an attitude everyone would be willing to pay the highest possible wages.

"Our afternoon was spent at the Boeing Aircraft plant, with its nearly 20,000 employees, and its vast areas requiring the use of scooters, bicycles and jeeps by the messengers and supervision. Manufacturing processes safeguard the work; spot welding replaces rivets, saving tons of weight; plastiglass molds give proper curves and comfort. There was considerable excitement about the plant the day we were there because of the election being held for a bargaining agent. It was a delight to see the appetizing food in the cafeteria, and to visit the comprehensive medical department with its efficient personnel. We are deeply indebted to DR. JOHN R. ERWIN for his personally escorted tour.

"In the evening there was the dinner at the Washington Athletic Club, with about 30 physicians present. Among them were DOCTORS KENNETH L. PARTLOW, A. H. GUNDERSON, L. M. FARNER, B. J. GILSHANNON, ERNEST M. BURGESS and his attorney brother, HOMER D. DUDLEY, JOHN R. ERWIN, A. BERNARD GRAY, GORDON B. O'NEIL, ELMER A. REISWIG, EDMUND H. SMITH, W. E. STEELE, CHARLES M. McGILL, FORREST E. RIEKE, FRANK C. HENRY, ROGER ANDERSON, HENRY B. GARRIGUES, FORREST FLASHMAN, DOUGLAS MURRAY, BERNARD OOTKIN, GEORGE BROWN, I. O. McLEMORE, ALEX GRINSTEIN, L. L. GOODNOW, and DONALD H. ECKLES. This gave me the opportunity to bring greetings from the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS, to outline the activities and services offered, and to indicate the progress being made in membership, certification, plant training, and annual meetings. . . .

"Leaving Seattle on Wednesday morning, we were impressed with the Seattle airport. It is one of the finest that we saw anywhere on our trip. It is new, spacious, clean, with beautiful stores, and the eating facilities are among the best. . . . Our flight to San Francisco was most enjoyable. At 8000 feet we passed within a few miles of the top of Mount Rainier, seeing its glaciers and formations. Mount Hood and Mount Shasta soon were passed, as well as the Three Sisters peaks. It was dry for this time of year, and snow was visible only on the higher peaks. The ravages of forest fires throughout this area constantly remind of the importance of fire prevention. Our pilot was especially considerate when he came to Crater Lake, making a complete circle around it so that we could see its beauty and remarkable deep blue coloring.

"At San Francisco, on Thursday, we had lunch with ARTHUR JENSEN, of Minden, Nebraska, a visiting banker, whom I hadn't seen for 30 years. The afternoon, with DR. RODNEY BEARD and DR. CHRISTOPHER LEGGO, was a real sightseeing expedition. A view from Telegraph Hill, the churches, Chinatown, Golden Gate Park, Seal Rocks, Camera Obscura, Coit Memorial, and the panorama of San Francisco at eventide from Twin Peaks, were part of our thrills that day. Of course, the Golden Gate and Bay bridges are always fascinating.

"Thursday evening we had a dinner meeting at Oakland, graciously arranged by DOCTORS BEARD, LEGGO, LEGGE, KIRKPATRICK and DART. It was interesting to meet with these and the other doctors present, and to hear their experiences in the field of industrial medicine. And it was equally interesting to learn of the courses that are being given at the University of California, and Leland-Stanford School of Public Health.

"Friday, November 4, was devoted to Berkeley and the University of California, through the courtesy of DR. and MRS. ROBERT T. LEGGE. While MRS. HOLMBLAD was escorted by MRS. LEGGE on a sightseeing trip and luncheon at the Faculty Women's Club, I had the pleasure of spending some three hours with DR. LEGGE and DR. WILLIAM G. DONALD in seeing the fine plant at COWELL Memorial Hospital on the university campus. The ERNEST V. COWELL Memorial Hospital is, to all purposes, exactly like an industrial medical department with hospital facilities. It renders medical service to 26,000 students at the university and has 100 beds in its main hospital and another 100 beds available in an auxiliary hospital built adjacent. Here the equivalents of

pre-employment or pre-placement examinations are called 'entrance physical examinations.' Stereoscopic x-rays of the chest are done, as well as complete physicals. Immunization procedures are recommended and carried out, and a sick call dispensary functions excellently. Treatment of athletic and other injuries to students constitutes part of the traumatic work. Such injuries, as well as illnesses, are serviced by the hospital staff and 30 or more specialists in the community who are called in frequently for consultation and treatment. The mental hygiene clinic of this hospital is doing a fine piece of work in evaluating mental problems among the students. A part of the afternoon was spent in seeing the university campus with its numerous new buildings and laboratories, and in an hour's stop at the botanical gardens, with their orchids and cacti and other interesting displays of plants and trees. Our visit to DR. ROBERT LEGGE'S home, with its beautiful gardens, was a real delight, and the dinner at the Claremont Hotel was a treat. We will long remember the masses of huge, beautiful chrysanthemums about this hotel, as many as 50 large individual blooms constituting one of the centerpieces. The evening was spent in a most interesting manner, sharing with DR. and MRS. LEGGE the valued recollections of their numerous world trips and other experiences.

"On Saturday, November 5, there was a morning tour of the business section, including some of the beautiful flower shops on Grant Street, and a trip through San Francisco's Chinatown.

"Saturday afternoon and evening we had the pleasure of seeing San Francisco through the courtesy of DR. and MRS. GILBERT BARRETT—enjoying their beautiful home, and dinner at the Woman's Club on Sutter Street.

"The open house at DR. RODNEY BEARD'S residence on Sunday afternoon and evening gave us an opportunity to get acquainted with many of our A.A.I.P. & S. members, as well as other prominent physicians and surgeons in the San Francisco area.

"The night flight to Honolulu was made exciting by the fact that at about 1100 miles from San Francisco, one of our engines began to leak oil, caught fire, and had to be put out of commission. With safety always the motto, we returned to San Francisco for a new plane and a new trip to Honolulu, but it was nice that we didn't get our feet wet.

"OUR arrival at Honolulu between 9:00 and 10:00 P.M. on Monday was a real thrill. We saw the lighted islands as we passed over them, and when we came to the airport, there were DORIS LARSEN and DR. H. MCLEOD PATTERSON to greet us with leis and kisses. From the moment we landed until we left, we were impressed by the constant demonstration of hospitality and the joy and happiness that are ever present in the lives of the poeple on the Islands. They were smiling and happy. Strangers on the streets smiled and greeted us. We did not see the hustle and bustle of our continental cities—we were not pushed around—and there was a distinct absence of the attitude of anxiety in faces and actions.

"Tuesday noon its was my privilege to address the Honolulu Rotary Club luncheon with about 350 present, sharing the speakers' table with SENATOR and MRS. WILLIAM F. KNOWLAND, of California. The subject suggested was "The Newer Concepts of Industrial Medicine." In a 30-minute period it was possible briefly to mention the type of industrial medicine in vogue 30 to 40 years ago, and then to touch upon its wonderful development. There was also the opportunity to elaborate a little on the types and character of services rendered by a comprehensive industrial medical department. It was a coincidence that the presiding officer of this luncheon should be MR. F. B. HERMAN, Manager of Kodak Hawaii, Ltd. Thus we had the pleasure of seeing the Kodak plant, and the privilege of a delightful late afternoon with MR. and MRS. HERMAN in their home. The Hawaiian homes, with their interesting and unusual gardens, were, of course, novel to us. The entire sides of rooms open up, with orchids and numerous beautiful flowers everywhere.

"The next few days were filled with pleasant experiences, engineered for us by DR. NILS P. LARSEN, DORIS LARSEN, and DR. H. MCLEOD PATTERSON. The trip around the eastern end of Oahu (Gatherine Place), seeing the Mormon temple and visiting the Kahuku plantation, was most interesting. As we prepared for luncheon at the plantation we were introduced to DR. IVY, and when I commented how much he looked like DR. ANDREW C. IVY, he said that he was DR. ANDREW C. IVY'S son, ANDREW, JR., and he told us how much he enjoyed his work with DR. H. T. ROTHWELL in the plantation hospital. In all of these hospitals one sees the excellent facilities for medical and surgical care, and learns that major surgical procedures of all types are frequently done, with most successful results. At Waialua we had the pleassure of seeing the new plantation hospital, where DR. ARTHUR L. DAVIS and DR. FRANK H. HATLELID are rendering a fine service. They have all the latest in hospital appointments, and the care and comfort of the patient are their foremost consideration. We were permitted also to see the living quarters of many of the plantation workers, some with high priced automobiles parked out in front. On the high school athletic field at Waialua we saw an interesting expression of the tolerance of the people of the Islands. There were four football teams practicing on this field, and from the faces of the players it was apparent that here, indeed, was a melting pot where race, color or creed made absolutely no difference. The people here have learned to live and work together in a beautifully harmonious way.

"At noon on Thursday there was a luncheon at the Pacific Club, with numerous industrial physicians in the Honolulu area. Among those present were DOCTORS CLARENCE FRONK, FREDERICK ALSUP, C. M. BURGESS, ROBERT B. FAUS, GROVER BATTEN, F. J. HALFORD, HARRY B. COOPER, and IVAR LARSEN. It was observed that industrial medicine and surgery up to the present time in the Islands has been comparatively free from unreasonable workmen's compensation claims and litigation problems. But it seems that possibly within the next few years there may be an epidemic of such compensation claims, even to the point of unreasonableness such as we frequently see in the States.

"DR. and MRS. LEONARD GOLDWATER arrived on the evening of November 10, and the dinner with them at DR. and MRS. NELS P. LARSEN'S home was our introduction to real Hawaiian food. The delicacies, with especially prepared chicken, baked bananas, and numerous other dishes, were a real treat. Here we met many of the doctors and their wives, and the delightful evening included a presentation of slides by DR. LARSEN on the historic development of the Hawaiian people as a race.

"Friday was the day for the Lake Forest College alumni luncheon, with an excellent attendance and the opportunity to meet classmates of some 35 years

ago. DR. H. MCLEOD PATTERSON gave us his entire Friday afternoon in showing us about many of the interesting sights in the Honolulu area. We saw the school up on the mountainside, the Punchbowl, the Foster Gardens, Honolulu Academy of Arts, Bishop Museum, the parks, and the Pali. Our delightful drive was terminated with a dinner at the Oahu Country Club, attended by some 40 persons, given in honor of DR. and MRS. GOLDWATER and ourselves. All too soon, on Saturday morning, we left Honolulu, and our next stop was Hilo on the Island of Hawaii (The Big Island).

"At Hilo we were met by MRS. WILLIAM N. BERGIN and her daughter, with more leis and greetings. DR. BERGIN recently moved into the City of Hilo from Pepeekeo Plantation Hospital, having purchased DR. SEXTON'S lovely home in Hilo. The luncheon at the BERGIN home let us meet all of his four children, who are charming. DR. BERGIN had planned a week-end trip for us, and, with his 10-year-old daughter, NANCY, we toured the 100 miles or more over the Saddel road between the two volcanoes to Kona Inn at Kailua on the west shore of Hawaii. The cattle ranges, with cacti and beautiful herds, the barren lava flows, many of comparatively recent origin, and the interesting vegetation were some of the sights we saw. At Kona Inn we found not only a delightful place to stop, with wonderful meals, but there was entertainment on Saturday night by Hawaiian dancers, performers of real talent. Here one sees walls 100 feet in length covered by night blooming cereus, African tulip trees blooming profusely, and a hundred other varieties of flowers present everywhere. Sunday afternoon and evening the trip included stops at Cook's monument, the City of Refuge, and then across the numerous lava flows on the southern end of Hawaii. We saw the great coffee plantations, with their drying sheds; the Kona coffee of commerce is raised here. Cotton was seen growing in abundance, and banana trees grow wild and also are cultivated for their delicious fruit. There is a profuse growth of guava, and along the roadside we picked thimbleberries, a glorified red raspberry. Our Sunday evening stop was at Kalauea Crater, at Volcano House in Hawaii National Park. Here we had all the thrills of being beside an active volcano with its steam vents, and a realization that our room and our hot water were heated from the steam of an active volcano. Hawaii National Park was a fine place to stay, and we enjoyed the bird tours and trips with the park naturalist. We saw the moving pictures of the 1942 and 1949 lava flows, with molten rock rushing down toward Hilo and cinder cones spouting hundreds of feet into the air.

"On Monday evening we were picked up at Volcano House by DR. and MRS. DEPP and taken to Hilo, where we had a delightful dinner with about 25 doctors and nurses, most of whom were interested in industrial medicine. Many of the physicians here took their training in the Chicago area; others were from the University of Pennsylvania, Creighton at Omaha, and the West Coast. In Hilo we saw wonderful flowers being grown, with acres and acres of antherium, blocks and blocks of orchids and multicolored ti and croton leaves.

"On Tuesday we were on our way to Maui (The Valley Isle)—which was the island where the Sixth Annual Meeting of the TERRITORIAL ASSOCIATION OF PLANTATION PHYSICIANS was to be held. This trip, a little over an hour in length, and skirting the northern shore of the island, gave us excellent views of the two volcanoes, Mauna Loa and Mauna Kea. On Maui there are numerous mountains, but the outstanding one is Haleakala (House of the Sun), an extinct volcano. DR. and MRS. WILLIAM B. PATTERSON and one of their daughters were waiting for us, and with them we rode on beautiful highways lined by fields of sugar cane, some in the early months of growth, others nearing maturity. The industrialization of these plantations is rapidly taking place with changes in transportation. The small industrial railroads with the sugar cane-loaded cars and little engines are now being replaced by tremendous tractor-truck combinations carrying as high as 40 tons of cane. These do not use the public highways, but travel on private roadbeds built on the former railroad embankments. Plantations on these islands have as high as 10,000 acres in sugar cane, and there are many thousands of acres of pineapple. The irrigation ditches and canals that carry the water 60 to 75 miles from the windward side of the island to the cane fields, are to be seen everywhere. We were guests at the PATTERSON home during the week we were on Maui. This spacious home, beautifully situated on a hilltop, surrounded by beautiful landscaping, trees and gardens, and with a swimming pool, is virtually a miniature country club. DR. PATTERSON lives just a mile from his hospital. On Wednesday morning DR. and MRS. LEONARD GOLDWATER arrived from Oahu and we had the pleasure of their company throughout the week.

"We toured the village of Puunene and the town of Wailuku and spent some time at the hospital, which is maintained by the sugar plantation. The spacious rooms, the fact that all of the facilities are on a single floor, the modern x-ray equipment and operating rooms, the delightful kitchens, the comfortable and convenient dispensary service, the excellent arrangements for examinations and consultations, make this hospital outstanding.

"During the next few days it was our privilege to see many of the sights of this beautiful island of Maui, and to visit its pineapple canneries and a sugar mill. These mills are really large chemical plants, and in the process of crushing the cane and extracting the sugar, chemical engineering is one of the outstanding features.

"There was a luncheon at the Wailuku Hotel, which was beautifully served in the lanai surrounded by beautiful gardens with orchids, antherium, and a great number of other sub-tropical flowers. After lunch we were given a trip around the northern portion of the Island of Maui and over to the town of Hana, an auto ride up and down the valleys, along the seashore, through the wooded hillsides, with over 900 turns and hills in this 60-mile stretch. The scenery was beautiful. The women of the Islands have undertaken the project of beautifying the islands with African tulip trees, and maintaining the beautiful landscape by eliminating billboards and advertisements on the highways. It is a pleasure to ride along and view the scenery without any disfiguring commercial installations. On this trip we saw the grazing lands of the large ranches with some of the finest herds of cattle that are to be found anywhere. It is from this side of the island that most of the water is carried by aqueduct, and even by tunnels through the mountains, to the drier plains on the western side.

The Sixth Annual Meeting of the TERRITORIAL ASSOCIATION OF PLANTATION PHYSICIANS began on Thursday, in the beautiful recreation room in

Puunene. Seventy doctors, from all of the islands, and many of the nurses from the hospitals were present throughout the sessions. This group of serious-minded industrial physicians and surgeons are to be complimented on their keen interest in all phases of industrial medicine.

The program was as follows:

## Thursday, November 17

PRESIDENT'S ADDRESS—WILLIAM B. PATTERSON, M.D., Assistant Medical Director, Puunene Hospital.

1. "Recent Developments in Treatment of Fractures"—IVAR LARSEN, M.D., Medical Group, Honolulu.
2. "Adequate X-Ray Study after Injury"—EDWARD C. HOLMBLAD, M.D., Managing Director, AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS.
3. "Peripheral Nerve Injuries in Fractures"—GUY S. HAYWOOD, M.D., Surgeon, HC&S Company, Puunene, Maui.
4. "Rehabilitation and Maintenance of Function after Fractures"—EDWARD C. HOLMBLAD, M.D.

## Friday, November 18

ROUNDS and Inspection, Puunene Hospital"—F. A. ST. SURE, M.D., Head Physician, HC&S Company.

"Demonstration of X-ray Pelvimetry"—WILLIAM B. PATTERSON, M.D.

"Case Report: Unusual Recovery in Arthritis" (Discussion by F. A. ST. SURE, M.D., and IVAR LARSEN, M.D.)—J. A. BURDEN, M.D.;

"Health Conditions on the Plantations"—NILS P. LARSEN, M.D., Medical Adviser, Hawaiian Sugar Planters Association.

"Pineapple Plantation's Prudential Medical Plan" (Discussion by J. I. E. REPPUN, M.D.)—WILLIAM H. WILKINSON, M.D., Hawaiian Pineapple Company, Lanai.

"Discussion of Plantation Medical Plans"—S. O. HALLS, and DR. A. L. DEAN, Health and Sanitation Committee, Hawaiian Sugar Planters Association.

"Plantation Manager Looks at the Medical Department and the Doctor"—RAY ALLEN, Manager, Wailuku Sugar Company, Maui.

"Industrial Application of Preventive Medicine" (Discussion)—LEONARD J. GOLDWATER, M.D.

"Art of Examining, Diagnosing and Treating the Industrial Patient" (Discussion)—EDWARD C. HOLMBLAD, M.D.

Panel: "Heart Disease in Relation to Employment"—NILS P. LARSEN, M.D., Moderator; COL. F. H. MOWREY, Chief, Medical Service, Tripler General Hospital, Honolulu; ALFRED S. HARTWELL, M.D., The Clinic, Honolulu; D. S. DEPP, M.D., Olaa, Hawaii; ROBERT F. COLE, M.D., Puunene, Maui.

## Saturday, November 19

NUCLEAR Physics and the Effects of Radiation on the Human Body"—LEONARD J. GOLDWATER, M.D.; Discussion by ROBERT B. FAUS, M.D., Medical Adviser to General McKinney on Radiological Effects of Atomic Bursts.

"When a Plantation Hospital is Discontinued"—P. H. LILJESTRAND, M.D., Director, Southshore Hospital, Aiea, Oahu.

"Treatment of Eye Injuries on a Plantation" (Discussion by WILLIAM J. HOLMES, M.D.)—HAROLD S. KUSHI, M.D., HC&S Company, Puunene, Maui.

"The Treatment of Head Injuries"—RALPH B. CLOWARD, M.D., Brain Surgeon, Honolulu.

"The Treatment of Chest Injuries"—JOSEPH E. FERKANEY, M.D., Chest Surgeon, Kula Sanitarium, Maui.

"Plantation Skin Conditions"—HARRY L. ARNOLD, JR., M.D., Dermotologist, The Clinic, Honolulu.

"The teruyaki steak dinner at the Beach House gave us the very great pleasure of meeting the wives of most of the doctors who were attending the Conference. At 8:00 the doctors returned to the meeting hall for their evening meeting while the ladies remained at the Beach House for a sociable evening.

"The Saturday morning breakfast was another opportunity to mix business and pleasure, and to hear the interesting and enlightening presentation of the problems of nuclear physics and the effects of radiation on the human body by DR. LEONARD GOLDWATER, with the discussion by DR. ROBERT FAUS.

"The meeting ended with a grand formal dinner on Saturday evening at the Maui County Club. The floral decorations, with centerpieces on the tables, had as many as 70 to 100 orchids in each centerpiece. There was a beautiful arrangement of orchids fastened into the branches of a tree about five feet tall, and in typical Japanese fashion with one tall branch and a smaller branch upon which many hundreds of vanta orchids were placed. It reminded one of cherry blossoms, or peach tree blossoms on trees without any leaves. There were no lengthy speeches, and the evening was spent in dancing, with Hawaiian music, and general good fellowship until late.

"On Sunday afternoon we watched the sunset from Mount Haleakala. This is part of the Hawaii National Park. The interesting drive is along roads patrolled by pheasants, quail and plover. On our way back we stopped at the mountain house about half way down the mountain, for a delightful dinner and an evening of slides shown by the park rangers.

"All too soon came Monday morning, and we had to depart from this garden spot. With the 8:30 flight we started for Honolulu, passing the beautiful islands of Molokai (Friendly Isle) and Lanai. Joining us on this trip was DR. LILJESTRAND, whose family met him at the airport of the Hawaiian Airlines and took us to the International Airport for our departure. We saw much of moving picture taking at the airport, and wondered what the attraction was. The first lady of the movies of Japan was to be a passenger on our plane. We left Honolulu on time, and again the trip was a joy from start to finish.

"The fog in Los Angeles made us land at Palmdale, some 70 miles away, but the bus brought us to our destination. Here we had the opportunity to meet many of our old Aurora friends, and the privilege of being guests of MR. and MRS. W. D. BURFORD. And soon we were in contact with FENN POOLE, JEROME SHILLING, RED JOHNSTONE, LELAND ANDERSON, and others of our friends. It was a privilege to see the medical installations of the Pacific Bell Telephone Company, the B. F. Goodrich plant, the Lockheed Aircraft medical department, and the headquarters medical department of the United Drug Company. The dinner with the SHILLINGS and DR. and MRS. RUTHERFORD JOHNSTONE at the Huntington Hotel in Pasadena was an outstanding event as was also the delightful visit with DR. and MRS. FENN POOLE, at their lovely home.

"Thanksgiving day we had dinner with old Aurora friends, and a delightful day it was, seeing much of Los Angeles and the San Fernando Valley. Of course, we passed the corner of Hollywood and Vine, and toured many of the boulevards in Hollywood, Westwood, North Hollywood, and the other communities. The latter days of the week included trips down the West Coast through Long Beach, San Pedro, and on to Laguna Beach and San Juan Capistrano. We lunched at the Victor Hugo Restaurant, seeing some of our Chicago doctor friends there, and we had an evening at the Knott Berry Farm, where on Mothers' Day over 9000 dinners were served. Sunday we spent with our host and hostess, and early Monday morning we started for Chicago—leaving the dense Los Angeles fog and smoke to rise some 2000 feet into the glorious sunshine, with the mountains close at hand. Six hours and five minutes from the time the plane left the Los Angeles airport, it arrived non-stop at our Chicago airfield. This last leg of our journey included the experience of seeing the Grand Canyon from the air, in all its beauty and rugged ramifications. So ended our trip, which included nearly 15,000 miles of air travel.

# Conference on Industrial Health
## —Preliminary Program—
### Chicago, April 22-29, 1950

THE participating organizations and the dates of their meetings are as follows:

AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS—April 24, 25, 26, 27, 28.

AMERICAN ASSOCIATION OF INDUSTRIAL NURSES—April 23, 24, 25, 26, 27, 28, 29.

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS—April 22, 23, 24, 25.

AMERICAN INDUSTRIAL HYGIENE ASSOCIATION—April 25, 26, 27.

AMERICAN ASSOCIATION OF INDUSTRIAL DENTISTS (To be announced later.)

## American Conference of Governmental Industrial Hygienists
### —Twelfth Annual Meeting—

### Saturday, April 22, 1950

COMMITTEE Meetings—all day, to be followed by the Dinner Meeting of the Executive Committee.

### Sunday, April 23, 1950

FOUR Consecutive Seminar Meetings (morning and afternoon): Physicians. Nurses. Engineers. Chemists.

Evening Meeting of Directors of State and Local Industrial Hygiene Programs with Staff Members of Division of Industrial Hygiene, U. S. Public Health Service (Closed).

### Monday, April 24, 1950

MORNING and Afternoon Meetings.

A.C.G.I.H. Dinner Meeting.

The A.C.G.I.H. Meeting resumes on Tuesday, continuing through the morning only.

## American Association of Industrial Physicians and Surgeons
### —Thirty-Fifth Annual Meeting—

### Monday, April 24, 1950

MEDICAL and Surgical Clinics—Wesley Memorial and St. Luke's Hospitals, beginning at 1:00 P.M.

### Tuesday, April 25, 1950

MEDICAL and Surgical Clinics—Cook County Hospital, beginning at 9:00 A.M.

12:00 NOON—Luncheon Intermission (the Exhibits Opening at 1:00 P.M.

1:30 P.M.—Section Meetings:
General Manufacturing—M. W. JOCZ, M.D., Chairman.
Steel and Heavy Industry—PAUL J. BAMBERGER, M.D., Chairman.
Petroleum, Rubber, Chemicals (meeting jointly with A.I.H.A.)—REX H. WILSON, M.D., Chairman.
Hand and Restorative Surgery—WILLIAM F. LAUTEN, M.D., Chairman.
Workmen's Compensation and Insurance—CARL T. OLSON, M.D., Chairman.
Mining Industry—CHARLES B. STACY, M.D., Chairman.
(There will be an intermission during each Section Meeting to view Exhibits.)

7:30 P.M.—"Alcoholism in Industry"—(A Repeat, by popular request.)

### Wednesday, April 26, 1950

MORNING Session, meeting jointly with the CENTRAL STATES SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY:

CHICAGO SOCIETY OF INDUSTRIAL MEDICINE AND SURGERY:

9:00 A.M.—Opening—A. H. WHITTAKER, M.D.

SCIENTIFIC SESSION—BURTON C. KILBOURNE, M.D., Chairman.

9:05 A.M.—"Diagnosis and Treatment of Non-penetrating Abdominal Injuries"—GUY V. PONTIUS, M.D.

9:25 A.M.—"Blood and Fluid Requirements in Trauma"—WALTER MADDOCK, M.D.

9:45 A.M.—"Re-employability of Persons Released from Mental Institutions"—ROLAND P. MACKAY, M.D.

10:00 A.M.—Intermission to View Exhibits.

SCIENTIFIC SESSION—THOMAS C. BROWNING, M.D., Chairman:

11:00 A.M.—"Trauma and Malignant Tumors"—DANLEY SLAUGHTER, M.D.

11:20 A.M.—"Selection of Treatemnt of Long Bone Fractures" JAMES J. CALLAHAN, M.D.

11:40 A.M.—"The Cardiac in Industry"—HAROLD J. STEINBERG, M.D.

12:00 NOON—Luncheon Intermission.

1:15 P.M.—General Session—Welcome—A. H. WHITTAKER, M.D.

1:30 P.M.—"The Industrial Medical Aspects of the Radio Isotopes"—GEORGE V. LEROY, M.D.

1:50 P.M.—"X-ray Interpretation"—JAMES T. CASE, M.D.

2:10 P.M.—"Antibiotic Therapy: Its Industrial Medical Application"—JOHN W. FROST, M.D.

2:30 P.M.—Intermission to Veiw Exhibits.

3:30 P.M.—"Evaluation of A.C.T.H. in Arthritis"—EDWARD F. ROSENBERG, M.D.

3:50 P.M.—"An Industrial Eye Program—Value Exceeds Cost" —ARTHUR K. PETERSON, M.D.

4:10 P.M.—"Solving the Solvent Problem"—ROBERT A. KEHOE, M.D.

4:30 P.M.—Business Meeting.

### Thursday, April 27, 1950

BACK Injuries—Classified"—ANDREW C. RUOFF, III, M.D., (At 9:00 A.M.)

9:20 A.M.—"Traumatic Neuroses Following Head and Other Injuries"—HARRY H. GARNER, M.D.

9:40 A.M.—"Vacation Policy Trends"—W. A. SAWYER, M.D.

10:00 A.M.—Intermission to View Exhibits.

11:00 A.M.—"The Ears of Industry"—RAYMOND T. CARHART, M.D.

11:20 A.M.—"Periodic Health Examination of Executives"—S. CHARLES FRANCO, M.D.

11:45 A.M.—"Vascular Phenomena and Vascular Complications in Traumatic Industrial Leg Problems"—DONALD S. MILLER, M.D.

12:00 NOON—Luncheon Intermission.

1:15 P.M.—*Joint Meeting—All Groups*—"Human Relations"—Panel Session—Moderator, GENERAL FRED GILLIES: Representatives of The United States Chamber of Commerce; Representatives of Big Business; Representatives of Small Business.

3:00 P.M.—Intermission to View Exhibits.

4:00 P.M.—Panel Session continues, with Representatives of Industrial Hygienists; Representatives of Industrial Dentists; Representatives of Industrial Nurses; Representatives of Industrial Physicians and Surgeons.

6:30 P.M.—Fellowship Gathering.

7:00 P.M.—Annual Banquet.

### Friday, April 28, 1950

MEETING Jointly with the AMERICAN ASSOCIATION OF INDUSTRIAL NURSES:

9:00 A.M.—"Standing Orders for Nurses in Industry"—Report of the Joint Committee.

9:20 A.M.—"Malpractice Problems in Industry"—

9:40 A.M.—"Aid Offered by Insurance Companies to Physicians and Nurses in Advancing Industrial Health Programs"—JOHANNA M. JOHNSON, R.N.

10:00 A.M.—Intermission to View Exhibits.

11:00 A.M.—"Absenteeism Control"—ARTHUR K. PETERSON, M.D.

11:20 A.M.—"A Visiting Nurse Service in Industry"—LOIS MYERS, R.N.

11:40 A.M.—"Antihistaminics—Their Use in the Control of the Common Cold in Industry"—CAPT. J. M. BREWSTER.

12:00 NOON—Adjournment (The Exhibits Close at 3:00 P.M.)

## American Association of Industrial Nurses
### —Eighth Annual Meeting—

### Monday, April 24, 1950

ALL-DAY Meeting of Executive Board, beginning at 9:30 A.M.
COMMITTEE Meetings, beginning at 9:30 A.M.
1:00 P.M.—A.A.I.N. Committee Meetings: (1) Committee on Education. (2) Committee to study Part-time. (3) Nursing Service in Industry. (4) Professional Standards Committee. (5) Policy Committee. (6) Membership Committee. (7) Budget, Ways and Means Committee.

### Tuesday, April 25, 1950

COMMITTEE Meetings, beginning at 9:30 A.M.
1:30 P.M.—Meeting of Industrial Nursing Consultants and Nurse Members—Chairman, JOAN Y. ZIANO, R.N., Industrial Nurse Consultant, Division of Industrial Hygiene, Department of Public Health, Illinois State Department of Health.
Co-Chairman, MILDRED MOORE, R.N.
Subject—"Theory Transposed into Action—Bird's Eye View of a Visit of the Industrial Nurse Consultant"—Participants: Management; Industrial Physician; Industrial Nurses; Industrial Nurse Consultant.

### Wednesday, April 26, 1950

INDUSTRY and Medicine Look into the Problems of the 45 to 65 year old Worker"—(beginning at 9:30 A.M.): Participant Speakers on—Nutrition; Accident Rate; Chronic Illnesses; Employability; Counseling.
11:30 A.M.—Visit Exhibits.
12:30 P.M.—Luncheon—Style Show.
2:00 P.M.—General Business Meeting (A.A.I.N. Members Only)—Presiding, MARY DELEHANTY, R.N., President A.A.I.N., Equitable Life Assurance Society, New York City. (Note: A.A.I.N. 1949 or 1950 membership cards required for admission.)
7:00 P.M.—Panel Discussion — Subject — "Responsibility and Limitation of the Industrial Nurse in the Welfare of the Worker"—Participants: G. U. man—Gynecologist, Psychiatrist, Management, Crime Prevention, Nurse.

### Thursday, April 27, 1950

GENERAL Business Meeting (A.A.I.N. Members Only)—beginning at 9:30 A.M. Presiding: MARY DELEHANTY, R.N., President A.A.I.N., Equitable Life Assurance Society, New York City. (Note: A.A.I.N. 1949 or 1950 membership cards required for admission.) One hour to be allowed on Proposed Plans of the Structure Study—Why Approving Plan II—Place of the Industrial Nurse in Plan II—Prepare Nurses for Biennial. Speaker: MARGARET LUCAL.
11:30 A.M.—Visit Exhibits.
1:15 P.M.—Joint Meeting—All Groups—"Human Relations"—Panel Session—Moderator, GENERAL FRED GILLIES.
7:00 P.M.—A.A.I.P.&S. Banquet.

### Friday, April 28, 1950

MEETING Jointly with the AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS:
(See under A.A.I.P. & S.)

### Saturday, April 29, 1950

BREAKFAST Meeting—Subject: "Self Evaluation and Job Satisfaction of the Industrial Nurse." (Beginning at 9:00 A.M.)

## American Industrial Hygiene Association
### —Eleventh Annual Meeting—

### Tuesday, April 25, 1950

TOXICOLOGY of Aliphatic Amines"—HENRICH BRIEGER, M.D., at 9:00 A.M.
9:15 A.M.—"Toxicity of Acetylene Tetrabromide (Tetrabromethane)"—M. G. GRAY, PH.D.
9:30 A.M.—"Acute Toxicity and Skin Effects of Plasticizers" E. VON HAAM and F. S. MALLETTE.
9:45 A.M.—"The Retention of Beryllium in Animal Tissues Following Exposure to Beryllium Compounds"—H. E. STOKINGER, PH.D., and L. T. STEADMAN.
10:00 A.M.—"Pharmacologic Tools Employed in Determining the Mechanism of Action of Uranium"—HAROLD C. HODGE, PH.D.
10:30 A.M.—"Methods Employed in the Evaluation of Antihistaminic Activity in New Drugs"—BRADFORD N. CRAVER, PH.D.
11:00 A.M.—"Methods for Detection and Evaluation of Sympathomimetic Activity"—PLUMMER.
11:30 A.M.—"Methods for Detection and Evaluation of Para-Sympathomimetic Activity"—NORMAN C. WHITE.
12:00 NOON—Luncheon—Local Sections Council Meeting.

JOINT Meeting with A.A.I.P.S. (Petroleum Rubber and Chemicals Section):
2:00 P.M.—"Industrial Hygiene Codes"—J. H. STERNER, M.D.
3:00 P.M.—"Injuries Resulting from Exposure to Ethylene Oxide"—R. J. SEXTON.
3:15 P.M.—"Clinical Effects of Parachloronitrobenzene, Cyclohexylamine, and Alpha Aminopyridine"—R. M. WATROUS, M. D.
3:30 P.M.—"Chemical Carcinogens"—J. R. HELLER.
6:30 P.M.—Dinner Meeting, Board of Directors.
8:00 P.M.—Round Table Conferences—Toxicology—Chemistry—Engineering—Radiation.

### Wednesday, April 26, 1950

PLANT visits during the morning.
2:00 P.M.—"Atmospheric Pollution Control by a Local Hygiene Unit"—C. E. COUCHMAN.
2:00 P.M.—"Atmospheric Pollution Control by a Local Hygiene Unit"—C. E. COUCHMAN.
2:15 P.M.—"High Efficiency Dust Collection of Radioactive Materials"—K. J. CAPLAN.
2:30 P.M.—"The Physiologic Response to a Mist of Sulfuric Acid"—J. F. TREON.
2:45 P.M.—"Lung Cancer in Chromate Workers—A Study of Hospital Records"—A. M. BAETJER, M.D.
3:00 P.M.—"Corrosion Resistant Materials for Exhaust Systems"—J. W. MCWILLIAMS.
3:15 P.M.—"Rates of Absorption of Phenolic Preparations Through the Skin"—W. B. DEICHMANN, PH.D.
3:30 P.M.—Intermission.
3:45 P.M.—"Efficiency of Filtration Methods for the Collection of Toxic Atmospheric Impurities"—SIDNEY LASKIN.

## American Association of Industrial Dentists
### —Seventh Annual Meeting—

(Program to be announced later)

# INDUSTRIAL MEDICINE AND SURGERY

EXECUTIVE, EDITORIAL, AND PUBLICATION OFFICES: 605 NORTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

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*Volume 19* JANUARY 1950 *Number 1*

## Preliminary

DR. TEBROCK, whose article on management of the common cold with an antihistaminic drug appears on pages 39-41, calls special attention to the preliminary nature of his presentation. He says: "This preliminary report is offered at this time because of the tremendous interest in this field of research. Its purpose is to inform other investigators, and others interested in this field, of the progress of our work. A more complete statistical treatment and an analysis of our results will be presented at the end of the present cold season."

## Education by Question

IT IS NOW obvious, even to the socialist clique in Washington, that there is no spontaneous public demand for so-called compulsory health insurance. But the agitation goes on, mostly because the "Happy Haberdasher" and certain of his cronies cling to the belief that they can make it serve their personal ambitions. Thus the Social Security Administrator thinks his efforts to peddle it to the people will stir up enough votes to elect him governor of New York. And so the pressure will continue, and the doctors of the United States will be forced to stay in politics. They didn't want to get into it in the first place, but, being in, they have done well. However, "the decisive battle still lies ahead." They must now multiply their efforts, and DR. ERNEST IRONS, A.M.A. President, has pointed out what they can do (page 12): "We must stop talking to each other and talk personally to each citizen. There is no profit in converting our own converts. Every worker must be aware of this present threat to his freedom. His doctor can do this better than anyone else." Various ways of doing it suggest themselves. Questions can be used to advantage. For example, the current increase in social security deductions makes it pertinent to ask the worker if he knows where his deductions go; how his money is spent; what became of the promised "trust fund?" Does he realize that he and his children will be taxed again to pay for what he was solemnly promised his social security deductions would pay for in full? Can he be sure that additional deductions for "health insurance" wouldn't be squandered in the same way—to be recovered later by still more taxes which he would have to pay? Does he know that he can buy better health insurance and more of it from insurance companies than he will ever get from any government plan, *and for less money?* Is he aware how much the squandermania in Washington is costing him now? Has he ever multiplied his payday deduction for income taxes by the number of paydays in the year? Does he know that if all the yearly incomes of $100 a week or more in the United States were to be taxed 100% their aggregate would pay the expenses of the Federal government for only about eight months? Was his little Christmas bonus nicked for taxes? It was, of course, but his President—"very happy" with what Santa Claus brought—got a $50,000 increase in pay *tax free.* Every question will be a good one if it is aimed at bringing home to the individual the fact that when he takes home his "take-home" pay he also takes home the dollars-and-cents proof that HE HIMSELF IS PAYING FOR ALL THAT HE GETS FROM GOVERNMENT, and that if he doesn't want to pay still more for things the socialist planners think he ought to have, he should demand of his Congressman that, first of all, *and immediately,* he be taxed less for the things he's now having to pay for that he doesn't want. In this connection, it is refreshing to find how often the wage-earner who is being questioned will come up with some very definite ideas on what those things are. The questioner can go on from there—until the man with the abbreviated pay check starts thinking in terms of what HE could do with the amount of its abbreviation. At that point he is likely to insist that his representatives in government be as honest in spending his money as they require him to be in letting them take it away from him.

# *SPEEDY*, SAFE Control of Common Colds with

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Comprehensive, controlled clinical studies by competent investigators[1] have established that colds can be aborted or their duration markedly shortened if ANAHIST is given in adequate dosage during the early stages.

Investigation has shown that toxic manifestations or distressing side-effects do not follow the taking of ANAHIST. **It can be stated with confidence that drowsiness or loss of mental alertness will not follow its use in the dosage suggested,** one 25-mg. tablet immediately upon exposure or at the first sign of a cold . . . then after meals, and upon retiring.

1. Arminio, J. J., and Sweet, C. C.: Indust. Med. (Dec.) 1949.

**Colds not only incapacitate the afflicted worker but expose co-workers to the danger of infection, thus causing substantial losses in man-hours. Physicians concerned with maintaining the health and productivity of both plant and office personnel will at once recognize the contribution that this new therapy makes.**

A special industrial package of ANAHIST (bottles of 1,000) is available for dispensing purposes.

*Write* for quantity prices and complete literature.

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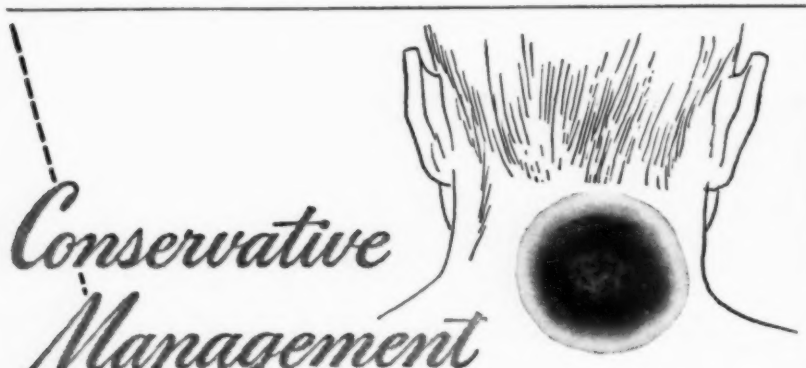
A ONE-sentence editorial: No country that has adopted compulsory sickness insurance taxation has kept its promises.
—*J. Arkansas Med. Soc.*, December, 1949.

## Belcher's Law

IN GALLOPING through a business analysis by Paul E. Belcher, published by the First National Bank, of Akron, Ohio, we ran into a sentence which ought to go places: "The trend toward a welfare state .... will end whenever more than half the voters are required to pay for benefits they themselves do not get." This statement ought to be dignified as Belcher's Law and be put into textbooks on economics. We are now in the phase where the good shepherds of the welfare state hope to keep the majority contented by extracting the bulk of the dough from the minority. When the minority runs out of funds, the test of Belcher's Law will be at hand.
—*Saturday Evening Post.*

## Hoover on Health

EMPLOYERS report that a first class medical and safety department will reduce occupational disease 63%, absenteeism 30%, compensation cost 29%, and labor turnover by 27%.
—From a study of the Hoover Commission's Report, in *New England J. Med.*, October 6, 1949.

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Bacitracin, topically administered, is a valuable means of treating a wide variety of local infectious processes. Physicians are invited to send for descriptive literature.

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## Socialized Labor

FIFTY-THREE years ago the British government set up a board to help settle labor disputes. From that small beginning the government has seized such power over labor that today: (1) A government tribunal can dictate the terms for settlement of any labor dispute. (2) The minister of labor, one of the most powerful men outside the communist countries, can order almost any Briton to work at whatever job the minister desires. (3) Strikes are illegal. (4) No Briton other than a professional person or executive can get a job except through the ministry of labor bureau. (5) No Briton working on farms or in coal mines can take a different job without ministerial approval.
—ARTHUR VEYSEY, in *Chicago Tribune*, October 23, 1949.

## Why He's Tired

MAYBE, says the Benjamin Franklin clinic of the Pennsylvania hospital, because he (1) Stuffs his business troubles in his brief case and totes them home at night. (2) Goes out to lunch and does more business talking than eating. (3) Can't take a real vacation because he thinks he's too indispensable. (4) Doesn't have a hobby but goes out once a week for a strenuous physical workout to cure all his ills. (5) Doesn't know—or practice—moderation in either work or play. That's the thumbnail sketch the clinic painted today from its treatment of more than 2,000 tired business men since the beginning of the study in February, 1949.
—News Item, November 1, 1949.

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Powder and Ointment of
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## Conference

THE following program was presented by the Committee on Industrial Health of the Massachusetts Medical Society at the Hotel Statler, Boston, Wednesday, December 14:

Opening Remarks. HENRY C. MARBLE, M.D., chairman, Committee on Industrial Health.

"The Physician in Industrial Medicine"—ROBERT B. O'CONNOR, M.D., medical director, New England Division, Liberty Mutual Insurance Company, Loss Prevention Department.

"Recent Advances in Industrial Medicine"—ALBERT O. SEELER, M.D., assistant professor of industrial medicine, Harvard University School of Public Health; and HARRIET L. HARDY, M.D., associate physician in charge of Occupational Medical Services, Medical Department, Massachusetts Institute of Technology.

Clinical Demonstration.

"Effective Small Plant Medical Program"—MR. WILLIAM H. SEYMOUR, vice-president, Liberty Mutual Insurance Company.

"Heart Disease and Industry"—HOWARD SPRAGUE, M.D., president-elect, American Heart Association.

## Physicians' Tax Guide

THE "Schering Physicians' Income Tax Guide for 1950" is a new and up-to-the-minute edition of this popular compilation of information on how to prepare the doctor's income tax declaration and return. It was prepared especially for physicians by tax experts Hugh J. Campbell and James B. Lieberman, and includes examples of filled-in tax returns, accompanied by lists of permissible deductions. Every possible situation in the proper completion of income tax returns is covered clearly and concisely. There are authoritative answers for everything from general tax returns procedure to

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such problems as bad debts or the deductibility of reading matter for the physician's waiting room. The "Guide" is being distributed free on request to the Medical Service Department of Schering Corporation, Bloomfield, New Jersey. A guide of this kind is a good thing to study, as much money is lost by taxpayers' failure to include all deductions.

## TV in Surgery

WILMOT CASTLE COMPANY and Remington Rand, Inc., have developed improved telecasting equipment for the teaching of surgery. A new Castle Light contains within its housing the camera and microphone, necessary transmitting cables, and all the other equipment necessary to pick up image and sound without sacrificing the illumination and mobility required to give clear vision. The operating room area is free from equipment and camera operators. Details of photography and telecasting are controlled by the monitor stationed nearby. In a demonstration at the University of Kansas Hospital, medical students, doctors, and nurses watched a hernia operation and a gall-bladder removal and heard the operating surgeons explain every step of the procedure which was going on in another building and five stories away.

## Cold-Susceptible

WEATHER changes and wet feet often get the blame for frequent colds, but two University of Illinois doctors are convinced that a hidden allergy may be at fault. People for whom life is just one sniffle or sore throat after another during the common cold seasons have more allergies than hardy persons who resist the virus, Drs. Noah Fox and George Livingston, of Chicago, found. Reporting in *Archives of Otolaryngology*, published by the American Medical Association, the doctors describe a study of more than 3,000 cold victims of all ages and walks of life. Only 358 of this cold-susceptible group had no personal or family history of allergy, while 2,127 were or had been allergic. "Frequently allergy goes unnoticed because it is of the borderline variety," the doctors write. "The nose and pharynx of the cold-susceptible patient must be examined to ascertain whether there are changes in the structures. The mucous membranes of the allergic person seem always to harbor organisms, ready, when the proper stimulus occurs, to overgrow. Although it is popularly believed that exposure to cold, humidity, fatigue, and debility are associated with lowered resistance to the common cold, confirmatory laboratory data are still lacking. However, these same factors are known to influence severely the allergic state of a patient. The great frequency of other allergies in the cold-

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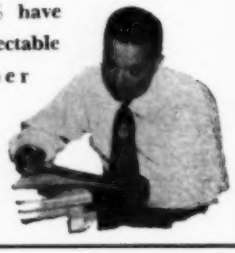
**"There is little reason for condoning visual defects in industry—at least 90% have proven correctable with proper care."**



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IN YOUR OWN PLANT, we will run sampling tests and make a visual analysis of job operations, with no obligation whatever. KEYSTONE VIEW CO., Meadville, Pa., ***originators of binocular vision testing in industry.***

**2500 Industrial Companies Use KEYSTONE Occupational Visual Tests**

susceptible person or in members of his family suggests a specific allergy to the virus or its proteins."

—*Pennsylvania Nurse*, December, 1949.

### Safety Courses

THE spring term of the evening program in industrial and traffic-safety training offered by the Center for Safety Education, New York University, begins February 6, 1950. The expanded curriculum makes it possible for students enrolled for a full program during the fall term to complete their course requirements for a certificate in either industrial or traffic-safety. In addition, new students and students not working toward a certificate are eligible for enrollment in any of the courses. The following will be offered in the spring term: *Basic Required Courses:* Safety Directors and Safety Engineers, Their Qualifications, Duties, and Responsibilities; Safety Organization: Values and Limitations; Management and Supervision in Accident Prevention. *Required Courses, Industrial Safety:* Industrial Hygiene and Occupational Diseases; Fire Prevention and Protection Inspection. *Required Courses, Traffic Safety:* Safety Supervision and Management in Commercial Vehicle Fleets. *Elective Courses:* Special Problems in Accident Prevention, Safety for Industrial Nurses. Student may register for the spring term until 6:00 P.M. daily during the week of January 30 or between 5:00 and 6:00 P.M. on the opening night of each course at the Center for Safety Education, 8 Fifth Avenue at Eighth Street, New York 11, New York. For complete information, write to the above address or call SPring 7-2000, Extensions 312 or 632.

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The buyer is assured of 12 perfect blades in every dozen Rib-Backs purchased. Their superior cutting efficiency and longer periods of satisfactory utilization are factors that reduce blade consumption to an economic minimum. As many quality-conscious hospitals already know, Rib-Back quality avoids price-buying penalties.
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### In Los Angeles

DURING the fiscal year July 1, 1948, to June 30, 1949, 341 plant visits were made. Ninety-four percent of these were at the request of either management, labor, industrial physicians, individual workers, or the State Division of Industrial Safety. The remaining group includes those in a ceramics industry survey and an industrial sanitation survey. Twelve new industrial health services were established in plants in our area. Seven of these provided for medical service at the plant. Five provided for full-time nursing services and an on-call physician. The County portable x-ray unit visited 23 plants and x-rayed 4,815 workers. X-ray findings which indicated lung, heart, or other pathology were followed up by the x-ray survey nursing staff working through plant medical departments. Referrals were made to the worker's private physician or to the proper health agencies. A physician with training in public health and a practical background in industrial medicine assumed direction of the Division in 1948. Our personnel problems continue about the same. Industry is always on the alert for a good man. The caliber of this Division and its versatile duties make our personnel very desirable to private industry. Early in 1949 our Industrial Hygiene Engineer re-

ceived and accepted a very tempting offer from industry. We are now faced with the problem of trying to obtain a qualified replacement for the post.

—From the Annual Report of the Division of Industrial Hygiene, M. R. PLANCEY, M.D., M.P.H., Director, Los Angeles County.

## Confidential

INDUSTRIAL HYGIENE DIGEST abstracts "The Importance of Keeping Medical Information Confidential," by K. R. FOURCHER, in *Medical Bulletin* Standard Oil Co. (N. J.), August, 1949, as follows: "The policy of the company for many years has been as follows: All medical diagnoses and other confidential medical information are kept within professional channels, unless there are legal obligations (industrial accidents or public health regulations) or it is to the advantage of the patient to disclose them, which is done only with his permission. 'The standing of the medical division is such that their recommendations in an individual case are accepted as the basis of official action. There is no need to disclose any intimate details.' The quotation is a statement of the practice in another large industrial company, but it expresses the policy of the author's company. Two smaller companies which were questioned stated that the general manager, in one case, and the president, in the other asked that reports of medical examinations be submitted to them. The writer thinks that this policy destroys the very ideas that Standard Oil and other large companies have tried to support, and that it does not obtain the best results."

## Send for a Copy

INDUSTRIAL Applications of Medicine and Psychiatry," American Management Association's Personnel Series No. 130, contains three excellent articles. They are (1) "Industrial Applications of Preventive Medicine," by LEONARD J. GOLDWATER, M.D.; (2) "The Practical Application of Psychiatry to Business Problems," by FREDERICK W. DERSHEIMER, M.D.; and (3) "The Changing Concept of the Personnel Function," by RAYMOND S. LIVINGSTONE. These were presented by their authors at the AMA Fall Personnel Conference in New York in September, 1949. Typical of the interesting manner in which the subjects are treated are DR. GOLDWATER'S comments on "Costs and Benefits": "Business men do not need to be told that when mass production methods are not applicable, high quality products tend to be expensive. This is true in industrial medicine. A really complete, first-class preventive program might cost as much as $30 to $40 per employee per year. If the employed group is small, the cost might even run higher. Few employers spend that much, yet many have excellent industrial health services. 'It is merely a matter of deciding which part of the program will


*for the successful treatment of...*

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**the DAXALAN-DOME-PASTE BANDAGE TECHNIQUE...**

**as introduced by Dr. William M. Cooper**

**Director, Department of Peripheral Vascular Diseases—New York Polyclinic Medical School and Hospital**

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DOMEBORO TABS are listed on page 376 of the "Manual of Dermatology" issued under the auspices of the National Research Council as "Burow's Solution-Domeboro Tabs"

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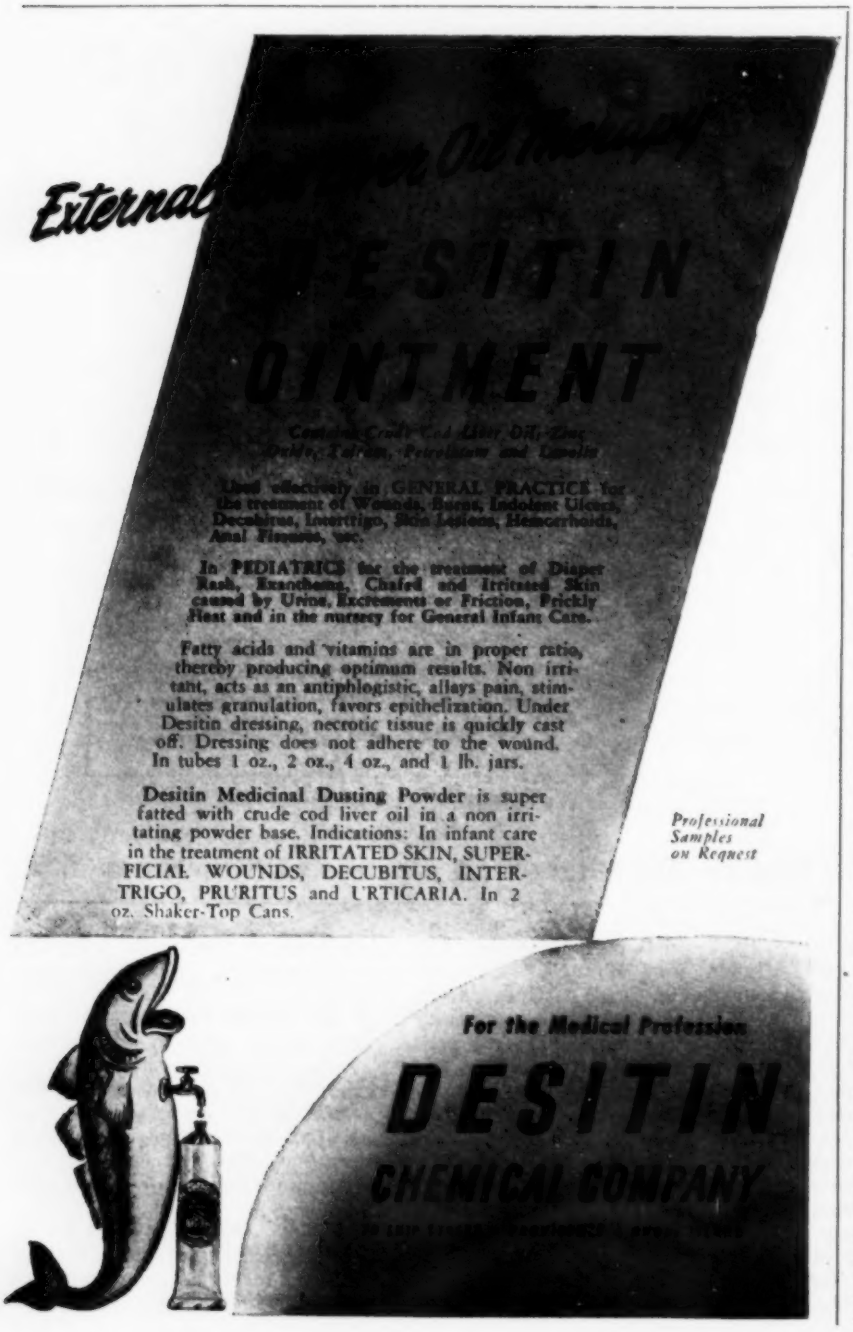
### Cancer

FIVE pamphlets, prepared by the National Cancer Institute of the National Institutes of Health, Public Health Service, emphasize that early cancer is frequently accompanied by warning signs and symptoms, and that persons who can recognize them and obtain prompt medical attention can usually be cured. The first, CANCER—WHAT TO KNOW, WHAT TO DO ABOUT IT, an illustrated folder, describes the cancer process and the known facts about its causes and approved methods of treatment, and lists the most usual signs of possible early cancer: (1) Any lump, especially in the breast. (2) Irregular bleeding or discharge from body opening. (3) Persistent indigestion. (4) Unexplained changes in bowel movements. (5) Unexplained weight-loss. (6) Changes in color or size of a mole. (7) Any sore that does not heal promptly. The other four, prepared in cooperation with the American Cancer Society, discuss in simple, interesting language but with scientific accuracy the essential facts about cancer of specific sites of the body. One of these is on cancer of the breast, a second is on female reproductive organs, a third on the digestive tract, and a fourth on the mouth and respiratory tract. Later pamphlets in the series will discuss cancer of the genito-urinary tract and skin cancer. All of them warn against reliance on diet, pills, or other "cure-all" remedies in the treatment of cancer, and emphasize that science knows only three ways to cure cancer: surgery, x-ray and radium or radon gas.

### Medical Examinations

AN increasing number of small and medium-sized companies are following the example of the

larger firms by requiring applicants to take a pre-employment physical examination. Among the advantages offered by the pre-placement physical are: placement of applicants according to their physical as well as other abilities; prevention of unjust claims for compensation due to old injuries; reduction of accident occurrence by proper placement of those who would be bad risks in some jobs; control of absenteeism caused by uncorrected physical impairments; prevention of epidemics; health education of employees; the possibility of eliminating arbitrary age ceilings, thereby widening the supply of qualified applicants. Companies meet the cost of medical examinations in various ways: Some have a physician on their regular staff; many retain one or more physicians in the community on a fee basis; others accept a report from the applicant's family physician. A disadvantage of compulsory pre-employment physical examinations is reluctance on the part of the applicant to comply with the requirement. To overcome objections, many companies assure applicants that they employ persons with various physical defects and that the objective is not to seek those in perfect health but rather to appraise physical capacities in order to place applicants properly, and to eliminate those whose employment in specific jobs would involve risk to themselves, their fellows, or the employer. Scope of the examination is often determined by the requirements of the job for which applicants are being considered, though some companies give candidates a physical examination that is complete in every detail. Regarding acceptance standards, DR. C. O. SAPPINGTON, an authority in the field of industrial medicine, urges physicians to keep in mind that people must work, and to make a sincere attempt to place everyone. Where undesirable physical conditions exist, the applicant may be employed on the basis of selective placement and supervision. In authorizing placement on work involving non-restricted activities, the physician may recommend that the personnel department require the applicant to waive benefits under the company's plan for medical service and wage benfits during sickness and disability in so far as any disability occurring during his employment is due to the disability described in the waiver as existing at the time of employment. Other applicants too may be given a report of their physical examination, as one of the purposes of these programs is the health education of employees. A number of companies require all employees to take an annual checkup, and this, of course, is essential in the case of those on restricted placement. This practice has influenced many to use the more precise term, pre-placement physical examination (rather than pre-employment). This emphasizes the concept of selective placement and does not have the misleading connotation of an examination primarily aimed at excluding people from jobs. Where there is a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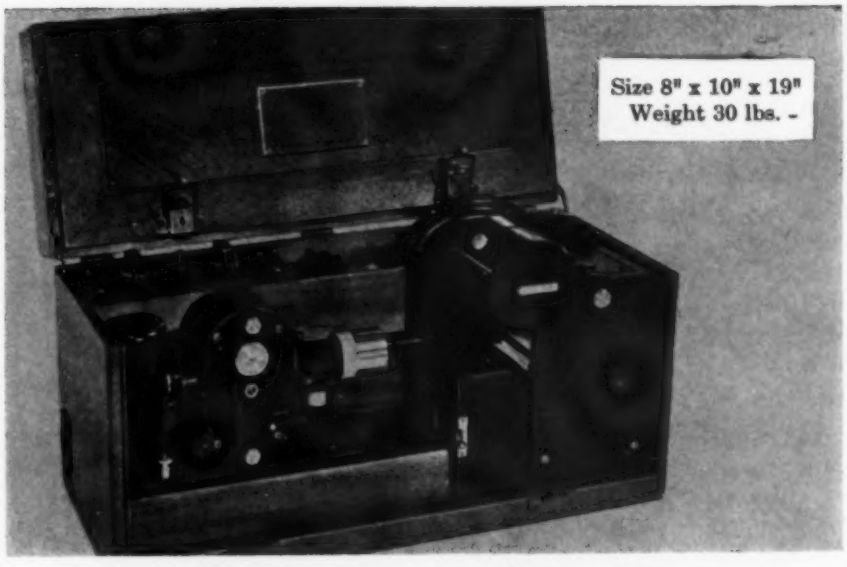
follow-up medical program in a unionized company, references to it may be made in the union agreement. For example, employees may be required to take a physical examination upon return from illness or leave of absence lasting more than a specified period of time to determine their physical fitness; or the agreement may specify the company's right to require the employee to have a physical examination by a mutually acceptable physician at company's expense at any time; periodic examinations may also be required on hazardous jobs or on jobs affecting public health and safety. As a safeguard for employees, the contract may contain a clause permitting the employee's personal physician to obtain a copy of the report of examination made by the company's doctor, or even a clause providing for arbitration by a third doctor if there is disagreement between the employee's physician and the company's physician concerning the individual's physical fitness for his job.

—*The Management Review.*

## Colonel Cox

IN HIS paper at the First Inter-American Congress on Industrial Medicine, at Buenos Aires, December 1-14, 1949, COLONEL WESLEY C. COX, Chief of the Army Industrial Hygiene Laboratory at the Army Chemical Center, Maryland, reported that the Army's program of industrial medicine and hygiene was of direct assistance in maintaining peak production in the vast system of Army-owned and operated installations, and thus contributed to final victory. At the height of World War II, "there were more than 250 Army-owned and -operated arsenals, depots, plants and ports of embarkation in operation, at which more than a million civilian employees were required for full time operation." The Industrial Hygiene Laboratory, established as a part of the Preventive Medicine Division of the Office of the Surgeon General, played an important part in the setting up of a program for safeguarding and maintaining their health, through pre-employment and periodical physical examinations, emergency treatment for injuries and illnesses, and a vigorous preventive medical program. The last included immunization, health education and nutrition programs, surveys and inspections of plant operations, sanitation, lighting and ventilation, disposal of waste and gas, and the prevention of the devel-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opment of industrial hazards. The Army maintains this type of program at all military installations having 200 or more civilian employees. Installations having fewer civilian workers are served by contracting with a civilian physician or group of physicians, a civilian industrial medicine clinic, or when feasible, another government agency. In all cases, the programs are basically the same. At the request of the participating representatives from 18 American nations and several European countries, COLONEL COX traced the development of government industrial medicine in the United States from the time, beginning about 1912, when it was concerned only with the regulation of the care of workers in private industry, until, after the Declaration of a National Emergency, the government became actively concerned with the medical welfare of its own employees. Although the Army has always operated arsenals, depots, and plants, during the first World War "the Surgeon General provided organized industrial medicine and hygiene programs only for the spruce industry, which processed lumber for use in the manufacture of airplanes." . . . COLONEL COX emphasized especially the value of the Surgeon General's Career Guidance Program which enables officers who desire to specialize in the major divisions of the sub-specialty of occupational health and hygiene to be classified, assigned and trained in that field and advance in their service career through the various branches of preventive medicine. "The present cost of the industrial preventive medicine programs, including administrative overhead, averages approximately $8.00 per capita per annum." The maintenance of the health of government employees "has proved the wisdom of providing for a program of this type."

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[1]Ring Brooches of Medieval Ireland, by Eileen Buckley

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***References***


1. American Committee for the Control of Rheumatism, Pemberton, R.: Rev. Gastroenterol., 9:91, 1942.
2. Spackman, E. W. et al: Am. J. M. Sci., 202:68, 1941.


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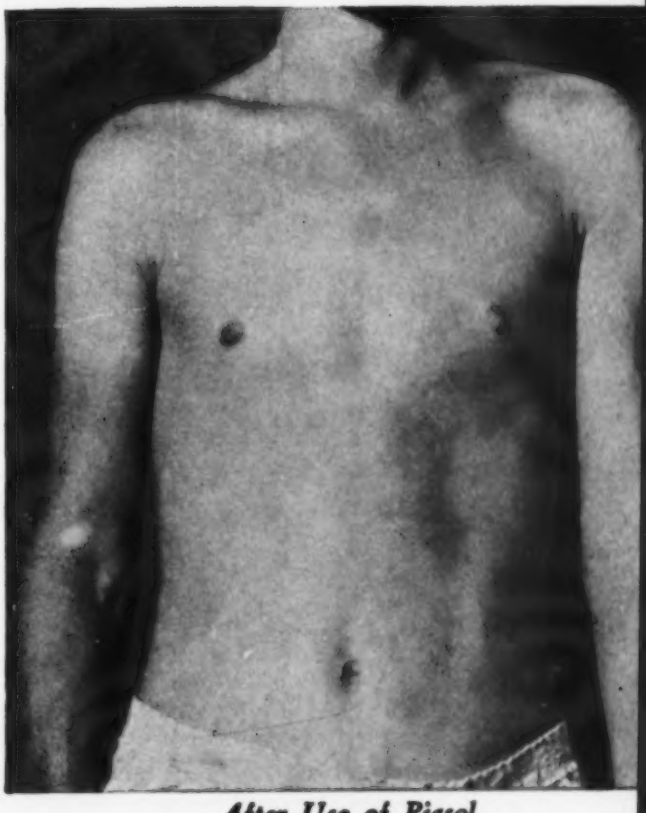

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Laryngoscope, Feb. 1935, Vol. XLV, No. 2, 149-154; Laryngoscope, Jan. 1937, Vol. XLVII, No. 1, 58-60; Proc. Soc. Exp. Biol. and Med., 1934, 32,241; N. Y. State Journ. Med., Vol. 35, 6-1-25, No. 11, 590-592.

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**A** *perient*
**T** *ime-honored*
**I** *ntestinal*
**C** *athartic*
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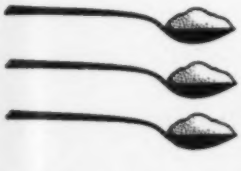

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# Evidence that Pyribenzamine aborts the Common Cold

**Of three antihistaminics tested in the common cold, Gordon[1] found Pyribenzamine "equally or superiorly effective in controlling symptoms and producing fewer and less severe side reactions."**

★ **Results of Treatment of the Common Cold with Pyribenzamine**

| Investigator | Number Treated | Benefited | % |
|---|---|---|---|
| Gordon[1] | 252 | 224 | 89 |
| Murray[2] | 494 | 397 | 80 |
| Brewster[3] | 466* | 348 | 75 |

*Includes patients treated with other antihistaminics

1. Gordon, J. S.: Laryngoscope, 58:1265, Dec. 1948 2. Murray, H. C.: Indus. Med. 18:215, May 1949
3. Brewster, J. M.: U.S. Nav. M. Bull. 49:1, Jan.-Feb. 1949

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